CHALLENGES OF ARMS TRANSFERS FACING THE EMERGING SUPPLIER STATES IN THE NEW INTERNATIONAL POLITICAL ECONOMY

By

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DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously, in its entirety or in part, submitted it at any university for a degree.

Signature **Date**

ABSTRACT

The fundamental motivation for emerging arms suppliers to produce arms was the desire to overcome their position of dependence in the system of arms production and transfers. However, their predicament as late entrants into the system castigated them to fail in this endeavour. This failure is based on three criteria, which also assist in the identification of emerging suppliers. Firstly, the weaponry they produce is far below the sophistication characterised by higher levels of technological advancement. Secondly, they can only produce one or two advanced weapon systems. Finally, they rely on the leading suppliers for certain sophisticated components of weapon systems which they cannot produce themselves and as a result, become so dependent that they, with an exception of a few, are unable to go beyond the simple reproduction or retrofitting of existing weapon systems. The capability to produce arms was restrictedly extended to certain states in the post-war era, and even those states that obtained such a capability were confined to producing small arms and platforms for naval vessels. Those states that went beyond these capabilities did so with the assistance of other states or specialists, the initial intention being to meet domestic requirements, and ultimately to dispose surplus Second World War equipment in the re-transfer market. The emerging supplier states' intention to develop indigenous arms industries was driven by the political urge to reduce their reliance on the leading suppliers and to nationalise the arms production process for import substitution in order to meet domestic security needs. Since the emerging suppliers began the process of defence industrialisation from the importation of complete weapon systems to import substitution, and ultimately to the promotion of exports, they mainly relied on technology imported from the leading suppliers. On the one hand, the leading suppliers attempted to hinder the efforts of emerging suppliers to promote arms exports so as to protect their oligopolistic share of the arms market through tightening the controls and regulations on technological supplies. On the other, the emerging suppliers were impelled to promote their arms exports in order to overcome the saturation of their domestic markets, to utilise effectively their arms production capacities, and to positively affect their balance of payments through the procreation of foreign exchange returns.

This study reached the following conclusions and inferences:

1. The arms trade has evolved to be characterised by the transfer of military technology, which did not feature in the arms transactions of the previous periods.

2. The gap between the leading and emerging suppliers is widening with regard to the sophistication of technological capabilities, and accordingly the stratification within the arms production and transfer system is sustainable and reinforced, thus making it hard for the lower tiers to progress beyond their current status.

3. The emerging suppliers' share of and contribution into the arms market is constricted, and as such they specialise in specific (often uncomplicated) weapon systems that constitute niches in the global market.

4. The unfolding arms production and transfer system is characterised by a fiercely competitive atmosphere, and consequently, only those states that can subsidise or integrate their efforts are enabled to sustain an advanced arms production faculty.

5. As the emerging suppliers begin to introduce more and more of their wares into the market, the costs of research and development begin to soar in the same manner as those of the leading suppliers, thus urging them to become more export-oriented.

6. Participants in the system will be compelled to relinquish their comparative technological superiority in order to survive, thus narrowing the gap between the capabilities possessed by both the leading and the emerging suppliers.

OPSOMMING

Die onderliggende motivering van opkomende wapenverskaffers om wapens te produseer word toegeskryf aan `n behoefte om hulle relatiewe afhanklikheid in die stelsel van wapenproduksie en –handel te oorkom. Boonop het die laat toetrede tot die stelsel hierdie opkomende verskaffers se kanse tot sukses verder belemmer. Die rede vir die onsuksesvolle toetrede word gebasseer op drie kriteria (wat ook dien as identifiserende eienskappe van opkomende wapenverskaffers). Eerstens, die wapens wat opkomende verskaffers lewer skiet tekort aan die vereiste gesofistikeerde standaarde van die gevestigde wapenprodusente. Tweedens, hulle kan slegs een of twee gevorderde wapenstelsels produseer. Derdens, sekere komponente van wapenstelsels word verkry by die gevestigde verskaffers, wat lei tot afhanklikheid tot so `n mate dat die opkomende verskaffer se vermoëns beperk word tot eenvoudige reprodusering of herinstallasies van bestaande stelsels. Trouens, in die post-oorlog tydperk is die vermoë om wapens te produseer doelbewus beperk tot sekere state wat `n afgebakende reeks van handwapens en uitrusting vir vloot vaartuie kon vervaardig. State wat verby hierdie vermoë beweeg het, het dit gedoen met behulp van ander state of spesaliste, oorspronklik met die oog op die huishoudelike behoefte maar ook om ontslae te raak van surplusse uit die Tweede Wêreldoorlog. `n Politieke begeerte om in hulle eie sekuriteitsbehoeftes te voorsien deur middel van invoersubstitusie, het die opkomende verskaffers genoop om ontslae te raak van die afhanklikheid op gevestigde verskaffers en om die wapenproduseringsproses te nasionaliseer. Hulle het hoofsaaklik gesteun op ingevoerde tegnologie om die verdedigingsbedryf te industrialiseer. Die proses het so verloop: volledige wapenstelsels is ingevoer, daarna het invoersubstitusie plaasgevind, en daarna `n bevordering van uitvoere. Gevestigde verskaffers het endersyds probeer om (deur middel van strenger kontrole en regulasies of tegnologiese ware) die opkomende verskaffers te verhoud om hulle oligopolistiese houvas op die mark te belemmer en andersyds moes opkomende verskaffers noodgedwonge hulle uitvoere bevorder om te voorkom dat die plaaslike mark versadig word. Die laasgenoemde aspek het ook die betalingsbalans van opkomende verskaffers positief beinvloed as gevolg van die inkomste uit buitelandse valuta.

Hierdie studie kom tot die volgende aanames en gevolgtrekkings:

1. Wapenhandel het só ontwikkel dat die oordrag van militêre tegnologie die hoofkenmerk geword het in die stelsel - `n ongekende kenmerk tot dusver in die ontwikkelingsgang van internasionale wapenhandel.

2. Die gaping van tegnologiese vermoëns tussen opkomende en gevestigde wapenverskaffers word groter en daarmee saam word die stratifikasie in wapenproduksie en -lewering volhoubaar en versterk, wat lei tot `n beperking op die vermoë van opkomende verskaffers om vooruitgang te maak.

3. Opkomende verskaffers se aandeel in en bydrae tot wapenmarkte bly beperk en spesialiseer daarom op spesifieke (meestal ongekompliseerde) wapenstelsels wat gemik is op sekere nisse in die wêreldmark.

4. Die ontluikende wapenproduksie en –handelsisteem is uiters kompeterend, met die gevolg dat slegs state wat hulle pogings kan subsidieer of integreer in staat is om gevorderde fasiliteite te onderhou.

5. Met die toenemende aanbod vanaf opkomende verskaffers, styg die kostes van navorsing en ontwikkeling vir beide die opkomende en die gevestigde verskaffer wat weer beide dwing om hulle uitvoere te beklemtoon.

6. Deelnemers in die stelsel sal gedwing word om hulle vergelykende tegnologiese voorsprong prys te gee om te oorleef in die stelsel, waarna die gaping tussen die vermoëns van opkomende en gevestigde verskaffers verminder sal word.

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CONTENTS

PART TWO
CASE STUDIES

PART THREE
ANALYSIS, FINDINGS AND CONCLUSIONS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1 – INTRODUCTION

1.1 OBJECTIVES OF THE STUDY

This is an endeavour to inductively explore, through a qualitative design, the ability of emerging arms supplier states to cope within the evolving post-Cold War competitive milieu of international political economy against the leading and well-established supplier states. As an exploratory effort, no theoretical perspective was adopted and perhaps this might be reflected as the endeavour reaches its conclusion. Case studies of the leading regional emerging supplier states were done based on the structures of international political economy. The states selected were determined by their prevalence in a regional setting in terms of their security and economic power, and specifically their status as arms supplier countries. These studies ultimately resulted in a combination of the findings that led to the development of inferences, which were hoped to subsequently lead to the enrichment of the existing theories of arms transfers. These inferences, it is hoped, will in future be evaluated against existing theories in order to establish discrepancies, congruity and/or consonance.

According to Laurance (1992:5), "the study of the arms trade can lead to a deeper understanding of global politics writ large, the fact is the literature of the arms trade has been very uneven in terms of the historical periods, suppliers, recipients, rationales, and effects studied". For Laurance (1992:10), the lack of research in this field, particularly in the 1980s, was rooted in the deficiency of policy initiatives on the issue from both the perspectives of suppliers and recipients, as well as from the advocates of arms control. However, it was predominantly a consequence of the failure of the Carter Administration's undertakings and the proliferation of new and unimpeded suppliers in the system. In the 1990s research on the field resurfaced as a reaction to policy initiatives with regard to the proliferation of ballistic missiles, especially after their utilisation by Iraq in the Persian Gulf War, and the establishment of the United Nations Arms Trade Register in December 1991.

Krause (1992:8–9) indicates five general weaknesses of the literature on arms transfers. Firstly, that it is not based on history, as it makes no reference to the process before the Second World War and it rarely refers to the location and changes in arms transfers to the overall context of the development of international relations. Secondly, the literature is centred on the United States and, with a few exceptions, is orientated towards providing policy prescriptions for the United States.

Thirdly, the motivations of the recipients and the impacts of arms transfers on them are briefly discussed. This is perhaps due to the nature of information available, which is mainly about suppliers, and this, however, impacts on the conclusions drawn because they will be incomplete without the recipients' concerns and responses on the evolution of the arms transfer system. Fourthly, the literature fails to integrate economic, military and political perspectives, thus overlooking the interaction of the various motivations in the pursuit of arms transfers. Finally, it fails to analyse the system of arms transfers within the context of interstate interaction in the global system; thus leaving the broader theoretical and analytical issues unaccounted for. The major flaw therefore is that there is little or no analysis of the structure of the arms transfer system.

According to Krause (1992: 5), the existing literature on arms transfers "fails to treat arms transfers within their systemic context" and thus provide a defective guide to addressing specific concerns such as standardised categories for suppliers, specifically minor suppliers *vis-à-vis* the leading suppliers, as well as to forecast their future role. Krause (1992: 8-9) further notes that

> "There has been little detailed work on how to divide the tiers or on what would determine membership in them (other than an *ad hoc* evaluation based on market share), no systematic attempt to relate this to the structure of the defence industry in various states, no attempt to determine if this structure is historically aberrant, and little attempt to assess the possibilities of movement between tiers"

Thus, for instance, minor suppliers are sometimes referred to as second-tier suppliers (Laurance, 1992:130), third-tier suppliers (Krause, 1992:29), Third World suppliers (Catrina, 1988:56; Moodie, 1980:294; Collinson, 1989:98), or secondary and potential suppliers (Frank, 1969:125).

Frank's (1969:50–51) categorisation of suppliers in the 1960s into principal, secondary and developing suppliers, created the foundation on which the various tiers were divided. Principal suppliers, according to Frank (1969:51), referred to those states that produced their own indigenous armaments and had been continuously involved in their exportation since the Second World War. Secondary suppliers differed from the principal ones in that they were intermittently involved in exporting the arms they produced; they produced some of their armaments through licensed manufacture; and they were "medium-to-small" arms sellers and buyers. Whereas, developing supplier states had little or no involvement in arms exports since the Second World War, but

emerged as small arms exporters in the 1960s and had a potential to increase their arms export capabilities.

In order to support Frank, Laurance (1992:138) maintains that the reason is basically that as developing suppliers they become firmly established in the *niche* markets where the leading suppliers are reluctant or unable to partake. This is due to the Third World demand for low-level or mid-level technologies that leading suppliers no longer produce or because of international constraints that the leading suppliers have committed themselves to. Laurance (1992:131) describes these developing suppliers as second-tier or Third World suppliers, while Krause (1992:153) designates them as third-tier suppliers.

In accordance with Krause's (1992:127) categorisation the United States and Russia are designated as leading suppliers because of their status as superpowers during the Cold War period. The second-tier suppliers are those states that have a global status that can be equivalent to that of the United States and Russia (or the former Soviet Union), since they have the capability to produce arms at an adequately high standard of sophistication. These suppliers also have the ability to produce a melange of modern armaments by using idiosyncratic designs and applying independently produced or imported components. Furthermore, they can ensure their own national independence and maintain their global status without adversely affecting their national economies. However, the reason for referring to them as second-tier leading suppliers is that they still depend, to a certain extent, on inputs from other (mainly the first-tier) suppliers and they still maintain the capability to reproduce other suppliers' technologies, which does not demand absolute autarky. Amongst these are France, the United Kingdom and Germany. States below this standard, such as Sweden, Canada, the Czech Republic, Switzerland and Belgium, can therefore not be referred to as second-tier suppliers. The reason is that "they possess only a specialised and limited production capability," and "have no meaningful design independence in major systems" (Krause, 1992:151). Hence, they would rather fall into the category of emerging suppliers in the third-tier.

It is upon this basis that Krause (1992:92) cautions against the utilisation of the conventional classification of arms suppliers into first-tier (superpowers), second-tier (industrialised states) and third-tier (developing states) suppliers. His circumspection is based on the fact that several producers from the developing states appear to be significant suppliers similar to other industrial producers such as Sweden, Italy, Canada, the Czech Republic, the Netherlands, Switzerland and

Belgium. Hence, the concept of emerging suppliers is adopted in this discourse, since the conventional categorisation used by the United Nations (UN) and the Stockholm International Peace Research Institute (SIPRI) overlooks this factor. Nevertheless, the major problem emanates from the statistical figures that are usually provided, as they fail to reflect the enormous disparities in technological capabilities along with the diverse motivations that these disparities procreate. For example, SIPRI (1999) and the Congressional Research Service (1999) place suppliers into two categories, to wit, major exporters (the United States, Russia, the United Kingdom, France, Germany, and, ironically, China and Italy) and other notable exporters, without contemplation of the divergences that exist within these categories.

Emerging suppliers are thus characterised as those suppliers, such as Sweden, Brazil and India, who because of the need to gratify their national security requirements resisted the leading suppliers' pressure not to develop their own arms production capabilities (see Table 1.1 on p. 14). They had managed to overcome the restrictions imposed on them by developing their own indigenous capabilities before and during the Cold War period, even though their level of self-sufficiency was not extensively advanced (Krause, 1992:156). Moreover, in most instances where emerging suppliers are assessed, they are still viewed according to the Cold War paradigm, as overshadowed or as appendages of the leading suppliers, and not as forces in themselves and for themselves. This endeavour therefore aims to scrutinise the emerging suppliers in this latter sense: as future potential competitors amongst themselves as well as in their struggles for markets with the leading primary and secondary supplier states. The intention is to assess their efforts to overcome the imbalances of the Cold War past, as well as their efforts to move beyond being merely regarded as regional players into becoming important actors in the global arms market.

According to Pearson (1994:47–48) emerging arms producers, particularly those from the Third World, appeared in reaction to security and welfare pressures, but also became eager to reach the level of leading producers in technology as technology has been perceived by most political leaders to be a key to security. The international power structure based on anarchy compels most states to upgrade their general capabilities. Thus most political leaders struggle to keep pace with the technologically and militarily advanced states by ensuring that their economies are adept to the task. However, the environment dictates that for those states coming late into the arms-exporting exercise, their economic capacities will be always vulnerable to the uncertainties of the market and the volatility of the global economy.

Hence, it becomes important that emerging suppliers should be further scrutinised, especially since they have not been assessed thoroughly enough in the past, particularly from an international political economic perspective on arms transfers. This became the reason why the researcher decided on this topic for such a study. The aim is to provide a guide on the challenges and the orientations of most emerging supplier states and companies towards the future of arms transfers to both governmental and non-governmental agencies interested in this field. Moreover, the emphasis will be on enriching existing theories on arms transfers and providing topics for further research, analysis and action from the perspective of the emerging supplier states, especially, since the field is still dominated by American and European studies.

1.2 RATIONALE FOR THE STUDY

According to Karp (1994:176), arms transfers are *at* the nexus of international relations since they provide the basis for the understanding of the international phenomena and processes ranging from the fields of international security and international economic dynamics to international and domestic political developments. Pierre (1982:3) avers that the arms trade is "far more than an economic occurrence, a military relationship, or an arms control challenge – *arms sales are foreign policy writ large*" and further, "in order to be better understood the arms trade phenomenon must be viewed in the wider context of the transformations under way in world politics. Arms sales must be seen, essentially, in *political* terms."

The arms trade is similar to the trade in other commodities such as oil, technology, food, clothing, and other merchandise, and is therefore not vindicated from the dynamics and pressures of market forces. However, it is a phenomenon that is uniquely relevant to international politics as it directly affects the functioning of global security (Laurance, 1992:3–5). Its political prominence is visible in the reactions by recipient states, particularly in the developing world, to suggestions for the establishment of an arms control regime as this impacts directly on their national security obligations, especially their rights to self-defence. Moreover, as an instrument of foreign policy, it reflects an increase in the trade of advanced technology, thus impacting directly on the forces of the international political system, as well as responding efficaciously to international economic developments, such as the volatility of the gold standard, oil price fluctuations, and the developing world bebt. Its prominence therefore is seen in its ability firstly, to indicate the number of eminent

actors in the international system; secondly, to connote the qualitative and quantitative changes brought about by the transfer of military capabilities in the international system, and finally, to influence or effect changes on important systemic aspects such as conflict and its management, economic developments, dependence and interdependence, and globalisation.

For Harkavy (1975:1), "the obvious fact that sales, loans and gifts of weapons have become a huge global business and a veritable hinge of global politics...one might indeed be tempted to claim that the international trade in arms ... has become the weightiest and most important instrument of international power and diplomacy". The channels used to transfer arms are often the same channels of international relations and diplomacy, and because of this, the parties involved in an arms transaction are often companions of the diplomats in the delineation of the nature and trends of international relations. With greater government involvement in arms production and transfers, the diplomat and the salesman are often one or are often in the same boat, as arms salesmen are civil servants employed to promote defence exports. Furthermore, the nature of the contemporary arms industry connotes a series of jointly combined industries that produces a weapon system rather than one identifiable so-called arms industry. This is due to the blending of science, technology and strategy fusing a wide range of occupations and skills that are beyond the scope of one discernible institution called an "arms industry" (Frank, 1969:6–7).

According to Pierre (1982:275), "arms sales are a barometer of politics among nations". Their prime significance "lies neither in their military impact nor in their economic consequences, as is often assumed, but in their political dimension. Whenever arms are transferred, they affect the political relationship between the supplier and the recipient. There is also likely to be an important impact upon other states within the region of the recipient country. And the transfer may well have consequences for the relations among the principal suppliers." Therefore, Krause (1992:1) believes that the international arms trade has an influence on the direction of international relations as well as on the evolution of the sovereign state system. However, the relationships amongst these realms are ill defined, as changes in each of these domains are linked to changes in arms transfers and production. Perceptions of state transformations with the changes in the role of arms transfers, particularly the guaranteeing of wealth, power and triumph in armed conflict are eminent. As a result, the emergence and evolution of the global arms transfers system can be perceived as a kaleidoscope through which these transformations in the international system can be viewed.

There are several reasons for arms transfers to attain significance in international affairs, according to Pierre (1982:275–278). Firstly, it is the increase over the years in the quality and quantity of arms being transferred. Secondly, it is the diminution of other security and diplomatic reassurance mechanisms such as alliances, military intervention, and the forward garrisoning on an ally's territory that prompted the large-scale increase in arms transfers. This is from both the demands of the recipients for more armaments in order to defend their interests as well as the pressure by suppliers to supplant the infeasible reassurance mechanisms. Therefore, contemporarily, arms play a significant role as instruments of diplomacy and security. Thirdly, as a consequence and a contributor to the diffusion of power globally, a tremendous increase in the demand for armaments is prevalent, which is reflected in the perpetuation of conflict and the intensification of antagonisms within regional complexes. Fourthly, as a consequence of the diffusion of power in international relations, new regional powers emerged. Their ascendance was accompanied by an increase in arms in order to strengthen their regional preponderance, and maintain the regional balance of power. At same time the incidences of regional conflict would be effectively reduced. Finally, local military power has become paramount in most regions of the world as a result of nuclear weapons. Their proliferation denotes a multiplication, rather than a reduction, in the demand for conventional weapons as states elect to rely on their own capabilities instead of their allies for the purposes of national security.

The complication, however, is the inconsistency of the literature that addresses the issue of arms transfers, particularly with regards to definitions, as well as the categorisation of the weapons systems. For instance, the terms "arms transfers" and "arms trade" are usually used synonymously: whereas the latter refers to arms transfers that are arranged on commercial terms, "arms transfers" is more comprehensive by designating all arms transactions that occur regardless of the contractual agreements attached to them (Catrina, 1994:191). Furthermore, Catrina (1994:191) argues that the weapons of mass destruction are not covered by any of these terms whilst there is no justification for excluding them, except by specifying which weapons one is referring to, conventional or non-conventional. The main element that affects the categorisation of specifically conventional arms is the manner in which prominent research institutions define specific concepts of arms transfers. They all define conventional arms differently. Some exclude small arms and light weapons, as well as other types of war material short of lethality, such as communication equipment, medical equipment and a multitude of additional military support items (Neuman, 1994:50–51). These flaws in the definitions also include technology, components and parts that might be used in the

production, assembly, upgrading and/or the maintenance of the weapon systems. This inconsistency and disharmony results in incongruous statistical presentations of the flow and, subsequently, in trends in arms transfers from one international player to the other.

Perhaps these definitional defects can be attributed to the motivations that drive the various institutions to pursue research in this field. According to Catrina (1994:191–192), research on arms transfers has either benefited or suffered as a result of vested interests, be they ideological, moral and/or economical. On the one hand, research benefited by placing the issue of arms transfers on the research agenda and the inferences motivating further research to authenticate or repudiate the findings. On the other hand, research suffered due to the role normative factors played in disregarding or even underrating certain items of arms transfers. These defects consequently become contagious on the end-users of the data in that they arbitrarily choose the source they intend to use in order to be amenable to the points they want to project. Their results reflect discrepancies on the findings and as such it becomes difficult to develop conclusive theories on arms transfers. A major contributing factor complementing these defects is the role played by state agencies to classify and prohibit access to information regarding the details of arms transfers. This is mainly due to security reasons, the fact that information may be used by their adversaries and thus eliminate the prospects for secrecy and surprise (Sokolski, 1994:159). The uncertainty and secrecy that clouds arms transfers, and consequently the poor quality of the data that analysts have to rely upon, underlies the poverty and "the tentative nature of some of the evidence (and hence conclusions) presented" in most of the literature (Krause, 1992:11). In order to highlight some of these problems, it is perhaps appropriate to briefly scrutinise what really takes place in the field of arms transfers.

Arms are sold or offered as military assistance for a variety of reasons, of which the broadest categories are economic and political. Economic reasons include business or government profits, improving the balance of payments, alleviating unemployment, amortising research and development costs, as well as "maintaining a warm base for cyclical arms industries dependent on high levels of external threat" (Harkavy, 1994:15). The political category includes the concretisation of alliances; the strengthening the regional balances of power; the acquisition of forward basing areas, the interception of the proliferation of weapons of mass destruction and their delivery systems, and the attainment of political leverage and influence on domestic and international security policy inclinations. Military assistance, according to Neuman (1994:49), encompasses all actions by states, international organisations, or other non-state actors that

contribute directly to the military efforts of combatants or would be combatants. It also refers to the provision of training, logistical support, intelligence, moral-political support, financial aid and/or sanctuary besides the supply of military hardware and technology. Other coercive actions that help the one side above the other through denial of assistance or the application of punitive measures, for example, embargoes, freezing of assets, censure in international institutions and threats of retaliatory military action, are also dimensions of military assistance, especially to states and their rivals in combat.

The political category of arms transfers, therefore, refers to the attainment of strategic goals. The goal of strategy, according to Beaufre (1965:209), is to accomplish the intentions of policy, utilising to the optimum the resources available. The main intention is to impose upon the adversary the desired goals, which are to demand of him to relinquish the pursuit of his own goals. The intentions of policy are expressed in the form of national interests, which may in turn be categorised into vital, major or peripheral interests. Vital interests usually exist in the international arena amongst nation-states and these interests should never be compromised by a sovereign state. If they are affected, grave harm can befall such a state and hence their defence requires the utilisation of forceful measures. The major and the peripheral interests do not necessarily require the application of acrimonious measures to the extent of coercion (Drew and Snow, 1988:26–30). According to Drew and Snow (1988:205), strategy has to identify risk to the nation-state's interests, and these are determined by political authorities. In the international arena, nation-states prefer to defend and promote their interests and would even revert to military action for them.

Historically, Harkavy (1994:19–20) argues that arms transfers comply with the extant international system and this was resonated throughout the rest of the Cold War era, where arms transfers could be characterised in terms of bloc polarity. The fact that in the 1970s and the 1980s new de-colonized states emerged and attained a non-aligned posture made the "tight bi-polarity" system, in Morton Kaplan's terms (extracted from Harkavy, 1994:19–20), into a "loose bi-polarity" system. This made these states to bargain between the United States and the Soviet Union as the superpowers in terms of leverage, influence, and the content and nature of the arms market. This situation did not alter the superstructure of international alignment that remained entrenched on the ideological divide, even though the People's Republic of China (PRC) defected from the Sino-Soviet bloc; France militarily withdrew from the North Atlantic Treaty Organisation (NATO); and the world witnessed the political turbulence and variances of states like Iran, Egypt and Indonesia.

Klare (1996:857–858) concurs with Harkavy that arms transfer patterns internationally are intertwined with the developments in the world security environment. In addition both they concur with the changes that are producing conforming shifts in the global flow of armaments. If one overlooks the United States' hegemonic period after World War II until the end of the 1950s, the world arms traffic was dominated by competition between the two power blocs led by the United States and the Soviet Union in the Cold War era, (early 1960s to the late 1980s). Anxious to obtain military allies from the emerging states of the Third World, the two superpowers offered sophisticated armaments through grants or less-pronounced sales to countries that were willing to align themselves with one or the other of the existing power blocs. These armaments consisted of the largest weapons flow ever experienced, particularly into areas that were regarded as central to the global correlation of forces. In order to maintain close ties with these states, sophisticated major combat systems – battle tanks, fighter aircraft, helicopters, missiles and warships – were transferred, resulting in high monetary values for global arms transfers in the 1970s and 1980s. The intention was to gain influence, retain allies and maintain leverage by supplying their regional partners and surrogates – states or insurgent forces – with large quantities of advanced weaponry, and, in some cases, instigating unprecedented regional arms races.

These patterns, according to Klare (1996:858), "constituted what might be called the cold-war paradigm of global arms trafficking". This paradigm consisted of the following trends: (1) the undisputed preponderance of the superpowers and their allies over the global arms flow; (2) the domination of ideological and geo-strategic considerations in the determination of the flow of arms; (3) the emergence and increased momentum of regional arms races in the contested areas of the developing world; and (4) an inclination on the part of the recipient countries to demand sophisticated top-of-the-range weapon systems *vis-à-vis* their rivals. During this period, particularly in the 1970s, emerging arms suppliers entered the arms production and transfer system as global arms suppliers (Laurance, 1992:130–131). They had a greater impact on the system in the 1980s due to the attention they received from other actors and analysts. However, they realised several factors regarding their role in the system. Firstly, that they could not compete effectively with the leading supplier states due to the latter's expertise in the field. Secondly, that they became preponderant suppliers to those states engaged in interstate conflict, due to the battle-tested nature of the equipment they provided, the relatively lower production costs of the equipment, as well as the fact that most of them belonged to the same group as the other developing states that procured the

equipment. Moreover, that the equipment they sold had fewer strings attached as compared to the leading supplier states.

Emerging suppliers were driven by five fundamental motives to produce arms, according to Krause (1992:162). These were to reduce the relations of dependency on capricious suppliers when confronted by serious threats to their own security; to expand their position in terms of regional and/or international power relations; to increase their efforts toward economic modernisation; to develop indigenous skill and technologies; and to save hard currency and improve their balance of payments by introducing import substitution measures. The study will concentrate on these motives and trends through the assessment of continuities and changes, and as such develop the ability to forecast future motives and trends.

Within the emerging international system of the post-Cold War period, Harkavy (1994:22–23) believes that one has to observe the relationship between the two bases of power within nation-states, as to which one is dominant between economic or politico-strategic (security) considerations. In his analysis of the different epochs of international relations and the corresponding trends in arms transfers, Harkavy (1994:22) maintains that there is a "growing submergence of security competition; such a submergence would lend an entirely new meaning to structural concepts such as bi-polarity or multi-polarity. One seeming hallmark of the emerging period is the absence of rival alliance blocs. NATO continues to exist, but who are its enemies?" Most studies on the post-Cold War security scenario, according to Harkavy (1994:24), have agreed on two main points: (1) that the United States' ascendancy of the military technological revolution will remain unchallenged for the next decade, "albeit with some diffusion of capabilities, pertaining not only to weapons themselves but also related doctrinal and organisational matters"; (2) that with regard to the four elements composing the military technological revolution, information acquisition systems, command and control systems, precision weapon systems, and weapons platforms, the latter is the main component of the past and current arms trade traffic. Notwithstanding its prominence, it is contemporarily regarded as the least important.

"For the moment, however, the most basic realities are those of a depoliticization and denationalization of the arms trade. With reference to the former, one can point to a diminution of the former geopolitical impetuses to selling arms, at least as applied to the superpowers, resulting in a largely commercially based arms transfer system. Regarding the latter, ...the growing

multinationalization of arms production and trade has made it more difficult to analyze the arms trade primarily in terms of national rivalries" (Harkavy, 1994:27–28). If this is the case, what then is the methodology followed in analysing this complex and multidimensional field of arms transfers?

1.3 METHODOLOGY

An evolving design that caters for flexibility and adaptability in instances where other methods may be required will be employed to address the research problem. The discourse starts with an overview of the state of global security in the post-Cold War era. This was done by evaluating pertinent documentation on the subject so as to identify predominant phenomena, trends and processes. Accordingly, the basis for the understanding of the nature of global security and the influences it might have on the current state of arms transfers is created. According to Laurance (1992:197–198), the trend of continuing regional conflicts might increase the demand for conventional weapons, particularly with the increase in conflicts motivated by the regeneration of nationalism and ethnic friction that emerged with the negation of the Cold War. Emerging arms suppliers, therefore, are the ones that are going to benefit from this demand as they produce weapons that are low-cost, mid-level technology, combat-tested, and actually apt for the current conflict conditions.

Furthermore, this tendency might even dampen the drive towards more sophisticated armaments, thus pressurising recipients to focus more on adopting extant technologies. By implication, the system will be characterised by a smaller global military-industrial complex, since this is reinforced by the fact that defence budgets are reduced in most developed states along with the existence of stupendous quantities of serviceable surplus equipment obtainable in the arms market. Moreover, the move towards "regionalisation" of the arms trade is becoming a possibility, particularly with the success of a single market in Western Europe, the establishment of a North American free-trade regime, the enhancement of the integration of Southeast Asian states under ASEAN (Association of Southeast Asian Nations), and the contemporary emphasis on the African Union. The increasing commercialisation of the arms trade might also act as a catalyst to an inclination towards regionalised arms production.

Laurance (1992:198–199) maintains that the lack of money towards purchasing new equipment, particularly in the developing world, will lead to states opting for upgrades and used-but-modern systems. Albeit the system will remain being a buyers' market, most recipients will be the belligerent states engaged in regional conflict situations. This buyer's market existed as a consequence of the increase in the number of arms suppliers, thus intensifying competition amongst the latter and subsequently providing the buyers with more leverage in terms of dictating the conditions for purchasing arms. With this tendency promoting some of the emerging suppliers, most leading suppliers – especially those producing advanced weapon systems – will be negated by the system, sometimes being forced to integrate their defence industries and to collaborate with the emerging suppliers in order to compete as major arms suppliers in the system. For the emerging suppliers, their role will greatly depend on the developments regarding the arms trade control regimes, treaties, agreements and other arrangements that are as yet to appear in the system.

Secondly, from the basis of the condition of global security, an attempt will be made to understand the changes in the systemic politico-strategic setting and the influences these might have on the trends in arms transfers, placing specific emphasis on the changing scenario from the Cold War era into the post-Cold War period. The reason for approaching arms transfer behaviour from a systemic level rather than other levels is that the data being utilised for the analyses are produced by states which makes it more observable and easier to conceptualise by using comprehensible rules. Moreover, the data utilised is more current from a state perspective and, therefore, for an efficient operation the currency of the information is more pronounced at the systemic level. Finally, possibilities for reaching consensus are more pronounced at the systemic level than at other levels, as the field is intensely saturated with varying interpretations, particularly at the state level (Laurance, 1992:170–171).

Thirdly, case studies are conducted on the various selected states based on the following aspects: the historical (political, military and socio-economic) rationale for the attainment of an arms-manufacturing capability; the major arms suppliers from the period prior to attaining an arms manufacturing capability to date are selected; the current market; the projected market; and problems and successes with regard to: production and trade; financing research and development; the transfer of technology and know-how; and the intricacies of the global security milieu. The case studies selected are considered to be archetypes of the categories of states being studied, and

accordingly, all the aspects referred to above are deliberated upon in each case and are presumed to be generally applicable to the other states within the same category (see Table 1.1 below).

Table 1.1: The Categorisation of Conventional Weapons Suppliers

Leading Suppliers		**Emerging Suppliers**		
Primary Leading Suppliers	*Secondary Leading Suppliers*	*Primary Emerging Suppliers*	*Secondary Emerging Suppliers*	*Tertiary Emerging Suppliers*
United States	France	**Sweden**	**Brazil**	**India**
Russia	United Kingdom	China (PRC)	Israel	South Africa
	Germany	Italy	South Korea	Singapore
		Canada	Taiwan	Malaysia
		Czech Republic	North Korea	Argentina
		Ukraine		Pakistan
		The Netherlands		Australia
		Belarus		Iran
		Poland		Egypt
		Spain		Chile
		Belgium		
		Switzerland		
		Japan		
		Slovak Republic		
		Hungary		
		Bulgaria		
		Romania		
		Austria		

Sources: Congressional Research Service. (1999). **CRS Report for Congress: Conventional Arms Transfers to Developing Nations, 1991 – 1998**. The Library of Congress: Congressional Research Service; SIPRI (1999). "The 31 Leading Suppliers of Major Conventional Weapons, 1994 – 98." **SIPRI Arms Transfers Project**. Oxford: Stockholm International Peace Research Institute; Bitzinger, Richard A. (1994). "The Globalization of the Arms Industry: The Next Proliferation Challenge." **International Security**. Vol. 19, No. 2. Fall. pp. 170 – 198; Klare, Michael T. (1996). "The Arms Trade in the 1990s: Changing Patterns, Rising Dangers." **Third World Quarterly**. Vol. 17, No. 5. pp. 857 – 874; Krause, Keith. (1990). "The Political Economy of the International Arms Transfer System: The Diffusion of Military Technique via Arms Transfers." **International Journal**. Vol. 45, Part 3. Summer. pp. 686 – 722; Kurth, James. (1991). "The Common Defense and the World Market." **Daedalus**. Vol. 120, Part 4. pp. 207 – 228; Neuman, Stephanie G. (1989). "The Arms Market: Who's on Top?" **Orbis**. Vol. 33, Part 4. Fall. pp. 509 – 529; and Whynes, D. K. (1979). **The Economics of Third World Military Expenditure**. London: Macmillan.

Amongst the emerging suppliers, Sweden is remarkable as a unique, non-aligned and neutral arms supplier state in Europe, and this makes it to be an outstanding model for the primary emerging arms producers and suppliers. It has a technologically highly developed arms industry due to the state's neutrality stance that emphasises national independence and a high level of autarky in arms development and production. Moreover, Sweden was never an ancillary to any superpower during the Cold War period, unlike the other primary emerging suppliers such as the People's Republic of

China, Italy, Canada and the Czech Republic. Sweden therefore produces indigenously most of its various major conventional weapon systems that include naval vessels, combat aircraft, tanks, armoured vehicles, heavy artillery systems and missile systems.

Another case study, as a salient model of secondary emerging suppliers, is Brazil, which differs from the primary emerging suppliers on the grounds that it began late to develop an indigenous arms development and production faculty. Correspondingly, Brazil has not as yet captured the process of innovation at the edge of technological advancement, and therefore still relies heavily on inputs from the leading suppliers. Yet, it has an expansive and enterprising arms production faculty that strives to develop specialised equipment at a very high level of technological sophistication. Besides, Brazil maintains a distinguished niche in the international arms market, which is solely focussed at meeting the general requirements of the developing states of the South as well as the specific needs of the developed world. In fact, Brazil provides a remarkable model amongst other secondary emerging arms suppliers such as Israel, South Korea, Taiwan and North Korea. The main reason is that Brazil's initiative to develop a vigourous defence industry was not buttressed nor endorsed by any other global power, as was the case with the other protégés of the United States and the former Soviet Union.

The final case study is that of India, which is regarded as a tertiary emerging arms supplier within the hierarchy of the arms production and transfer system. It shares this status with other emerging arms producing states, such as South Africa, Malaysia, Australia and Singapore, amongst others, which have not yet established themselves as prominent and formidable suppliers within the international arms market. However, India has all the attributes of a secondary emerging supplier, and could even become a primary emerging supplier, if the economic and commercial considerations could outperform the security concerns as the rationale for developing, producing and transferring armaments. Actually, India established one of the largest defence industries in the non-western world, as part of the effort to offset the impact of such security concerns. Paradoxically, though, it became one of the largest arms importers in the world. The major reason for this was that India's arms production was mainly based on licensed and co-production arrangements as a result of unsuccessful and dear indigenous arms projects, which were also not compensated through energetic exports like the other emerging suppliers. Accordingly, the failure of the Indian defence industry to successfully penetrate the export market has made it to remain amongst the ranks of the tertiary emerging suppliers.

These three case studies provide the essence of this endeavour and the data collection methods were mainly focussed on secondary sources, which included the review of documents such as books, published and unpublished articles as well as newspaper clippings. Unfortunately, the intention to conduct unstructured in-depth interviews with executive officials of the major arms industries and members of the diplomatic staff of the selected case studies were hindered by financial and institutional constraints. However, efforts were made to consult with scholars and analysts of international security studies and arms transfers in order to entertain their views and interpretations of the (emerging) trends and processes with regard to the cases of study.

Fourthly, information is collated according to the demarcated aspects dealt with in the case studies and, interpretations of the data are produced with contingency preparations for the problems of reliability and validity arising from the discrepancies in the definition, as well as from the presentation of data by the various individuals, institutes and publications consulted. Fifthly, inferences are developed (for further research) based on the combination of the findings and analysis of all the case studies handled. Possibilities for the testing of the inferences developed with the evolution and evaluation of the theory could not be conducted as a result of the limitations of the research endeavour. Conclusions, therefore, substantiate the analysis and evaluation, as well as attest to the value of the effort.

1.4 STRUCTURE OF THE STUDY

The discourse is composed of three parts, part one deals with the theoretical perspectives as well as the political and economic realities of arms transfers. Part two is composed of the case studies, and part three consists of the analyses, findings and conclusions. Under part one, chapter two focuses on the international political economy of global security in the post-Cold War era; chapter three looks at the arms production and transfer system and the dynamic significance of technology; and chapter four analyses the rationale for transferring arms: the international political economy of arms transfers. Part two deals with the case studies: chapter four, the primary emerging suppliers (Sweden); chapter five, the secondary emerging suppliers (Brazil); and chapter six, the tertiary emerging suppliers (India). Part three is made up of chapter seven that concentrates on the analysis and findings; and chapter eight, as the final chapter, focussing on the summary and conclusions.

PART ONE

THE THEORETICAL PERSPECTIVES AND THE POLITICAL ECONOMIC REALITIES OF ARMS TRANSFERS

CHAPTER 2 – THE INTERNATIONAL POLITICAL ECONOMY OF GLOBAL SECURITY IN THE POST-COLD WAR ERA

2.1 INTRODUCTION

The "new world order" that was ushered in by the end of the Cold War, resulted in the unification of Germany, the demise of the Soviet Union, and the end of the world socialist system in East and Central Europe. This new order was promoted further by the involvement of the coalition forces led by the United States against Iraq's invasion of Kuwait in 1990, with the victory of the coalition confirming the only residual superpower status of the United States in the post-Cold War era.

The various paradigmatic approaches placed their partisan emphasis on the nature of the new world order, especially in the United States, resulting in that country being the champion of the previous East-West conflict. The (neo) realist paradigm emphasised the anarchical nature of the post-Cold War situation with the unipolar type of relations, where the United States had to concentrate on the questions of national security and the well-definition of threats since there was no tangible threat from the East, as the Soviet Union was disintegrating. The liberal pluralist accentuation was on the nature of international relations as being far from geo-strategic, as was the case in the Cold War epoch, but more geo-economic and, as a result, viewing matters of national security only with regard to the threats to national economic interests. These became the two main international political paradigmatic contests, albeit with ancillary variations, that surfaced and accompanied the concept of the new world order.

This does not mean that the other regions in the world were neither affected nor tried to comprehend the changes that the new world order introduced. The global decline of the Soviet Union as a superpower as well as the end of the Cold War could be felt even in the poorest countries internationally. It proposed changes in the manner in which players in domestic and international politics viewed themselves as well as others. It introduced drastic and fundamental changes that negated and buried the protuberances and the quintessence of the Cold War, especially for the Third World. However, perilous threats to peace and security are the main problem of the Third World, and in most instances they assume unmanageable proportions. The ability of the United Nations (UN) to maintain peace and security in the post-Cold War era becomes questionable in the light of

these threats. Failure by the UN to attain permanent solutions to conflicts in the Third World, according to Owolabi (1996:8), obliges the re-examination of the factors that have led to this situation as well as the probable innovative sketches that may be utilised to ease the tension.

Since globalisation and regionalisation dominates the scene presently, there is an endeavour to search for a new and shared paradigm of security, which should be global security. This refers to "a system of world order or security" embodying a programme that caters for common security globally. The intention is to create a global security system or a system of world order that "presupposes a universal concept of security with a shared set of norms, principles, and practices which result in common patterns of international behaviour" (Haftendorn, 1991:11–12). This system therefore presumes the existence of strong institutions that will regulate relations between units and actors within the system as well as enforce the commonly accepted rules and norms. It negates the preponderance of military force in favour of co-operative strategies through the creation of "institutions around common interests, in facilitating the evolution of shared norms and principles, and in furthering a common understanding of the problems confronting mankind" (Haftendorn, 1991:12). This new paradigm is supposed to conform to three main proposals by explaining the issues of diversity and change – within and between the various regional complexes and states; elucidating the dynamics of transition from one preponderant concept to another; and unravel the critical aspects of systems transformation (Haftendorn, 1991:12).

In this chapter the paradigm of global security in the post-Cold War era will be discussed in order to identify predominant phenomena, trends and processes. In doing so a basis for the understanding of the nature of global security is created on which the influences it might have on the current state of international political economy could be determined; as well as the influence that salient trends of international political economy, such as globalisation and interdependence, have on the nature and content of current thought about global security. The major theoretical perspectives and their ancillaries are reviewed regarding their views on the concept of global security and the broadening of its agenda. The cardinal argument raised therefore is the broadening of the agenda of global security and the implications this might have on the current politico-strategic environment. Accordingly, the basis for understanding the nature of global security and the influences it might have on the current state of arms transfers will be created.

The chapter begins with a review of the features of the post-Cold War order that necessitates the broadening of the agenda of security. The broadening of the security agenda contains the definition of the concept of security, the arguments for and against the broadening of the agenda, and the introduction of a balanced prescription of global security. Furthermore, the international political economy and the structure of security are discussed, including the effort of ensuring economic security within the international political economy of market democracy and the international political economy of the Third World security problematic. The last portion argues that the presence of weak states in the international system makes the latter unstable and therefore unable to guarantee the effective implementation of global security.

2.2 FEATURES OF THE POST-COLD WAR ORDER

There are four large structural dilemmas of the present world order which, according to Brzezinski (1991/92:7–8), are crucial to global security and are structural consequences of the Cold War. The first is the manner in which Europe will define itself in future – whether it will be a Europe on a supranational basis, a deeper before wider Europe, a wider before deeper Europe or a Europe of co-operative states. The next refers to the nature in which the states of the former Soviet Union are going to transform themselves – be it a reversion to the past or fundamental transformations as anticipated by Western states. Then it is the manner in which the Asia-Pacific region will organise itself, whether Japan should assume the predominant role that is congruous to its economic prevalence and the anticipation on the PRC's viewpoint *vis-à-vis* this position. In the last instance, the manner of handling the problems of the Middle East, particularly the thorny issues of the Persian Gulf region and the inextricable Israeli-Arab conflict. However, there is a fifth, quite significant, structural dilemma that is overlooked by Brzezinski and that is the discord between the developed North and the rest of the developing Third World – one that could actually determine the course of the post-Cold War period. It is upon this structural dilemma that the final section of this chapter is focussing, since the North-South predicament does not guarantee the stability of global security in the post-Cold War period.

The end of the Cold War introduced new assumptions about the nature of the new world order. Firstly, with the establishment of "market democracy" as a universal standard, all the problems relating to global economic interdependence, cultural intercourse, trade globalisation, and environmental calamities, were forecasted to be eventually eliminated. This assertion was based on

the premise that co-operation on an international scale had been hampered by ideological differences, and as these came to an end, co-operation would be naturally augmented. The second assertion, which springs from the first one, maintains that as ideology and globalisation are in tandem removed, a world government will be ushered in, under the auspices of the UN, managing the overall global funds. In fact, according to this assertion, the current international system is different from what was previously assumed: it is a loose system, which also "appears to be progressively divisible, flaky and transient" (Laïdi, 1994:1). Power and purpose are strongly contrasted within the contradiction between the expeditious process of market globalisation and the prominence of ethnic, cultural and regional identities. Perhaps this retreat into identities, according to Laïdi (1994:1–3), reflects a response to the processes of globalisation and therefore does not provide any direction. If it could be comprehended from this perspective, it may trigger a "chain reaction" that threatens the practice of political sovereignty within states, and in particular the military aspect of the individual state.

The inability to connect military power and purpose raises two sets of problems. Firstly, during the Cold War era, the concepts of defence and security conformed naturally. Whereas currently, on the one hand, the concept of security is broadly applied, on the other hand, there is no politico-military actor that is systematically connected and identified with the security problem. Military reaction (defence policy/purpose) to problems of insecurity is not efficacious and firm to frame security policies. Secondly, defence is viewed entirely from a national perspective, with alliances playing a supplementary role to this actuality. Wider and deeper alliances, such as in Europe, occurred as a result of specific factors, such as sharing (necessarily) the cost of military research and development; the lack of a collective military instrument fuelling an urge for "collective supranational identities"; and the inadequacy of national solutions to addressing threats emerging from problems of "political contagion" (for example the spill-over effects of the political consequences of the disintegration of weak states), instead of a clash in inter-state relations (Laïdi, 1994:2–3).

Looking at this situation from another angle, war between great powers is not something that can be ruled out as a result of the end of bipolar tensions between the United States and the erstwhile Soviet Union. A lot of ideas abound in current literature about a twenty-first century concert of powers and a new balance of power, while in other parts of the erstwhile Soviet Union and in many parts of the Third World the realities of security dilemmas, interstate wars and local arms races still

prevail. However, Holsti (1996:206–207) believes that most of these conflicts are bound to emanate from problems arising within the states themselves rather than from relations between them, particularly in many parts of the Third World, where substantive or dormant hegemonies, alliances, nuclear deterrence or balances of power are non-existent. Great powers are mainly going to be concerned with economic issues, leaving the periphery to deal with the problems of conflict. The military capabilities of the great powers are going to be used by the UN to revitalise or sustain weak or collapsing states. Therefore, the UN will continue being a terrain of struggle on two fronts: the amendment of the Charter to focus more on contemporary demands than the Westphalian foundation on which it is based; and the problem of representation within the Security Council.

According to Laïdi (1994:4–5), the post-Cold War world is characterised by several representations which make it difficult to describe it as one era. It began with the fall of the Berlin Wall and it was the first time that a new international order came into existence without a military clash of the dominant powers. The collapse of the bipolarity bloc system after the Cold War also initiated the triumph of regionalism over globalism, which was anticipated (and is still construed) by most analyses to be the other way round, but however failed to introduce a new order or a delineation of its own. Approximately seven potential world order models (see Table 2.1 below) began to surface, each struggling for recognition and each with its own distinguishing features which, however, were not salient enough to provide a structure that can prevail such as during the Cold War and the other periods prior to it (Zartman, 1994:xi–xii).

When viewing all these models, it becomes obvious that they represent the various dimensions of the post-Cold War period and individually therefore can not evolve to become the universal model of the new world order. In reality, the fundamental characteristic of the new world order is based on the intertwining of politico-strategic, diplomatic and economic considerations, and as such, the intertwining of these considerations determines the new hierarchy of power. The end of the Cold War negated the ultimate reasons for demarcating between friends and foes, as well as between central and peripheral conflicts. Conflicts, according to Laïdi (1994:11–12), have been structurally altered from being more vertical (these conflicts are not equally important) to being more horizontal (that the complexity and particularity of conflicts means that they do not require similar solutions). Furthermore, the fading of the nuclear threat diminished the prevalence of the politico-military domain in international relations and, correspondingly, economic competition sharpened rapidly. Gains attained by a particular actor in a specific field became increasingly less conveyable into

another and, as a result, the gap between political, military and economic power increasingly widened. The volatility of the international system entrenched this non-fungibility of power and furthermore diminished the importance of special international regimes dominated by one actor, replacing them with interim and incomplete arrangements that call for renegotiations at certain intervals.

Table 2.1 Potential World Order Models

MODEL	*FEATURES*
Unipolar Model	The United States has the largest national economy, is the leading nuclear power, the foremost originator and supreme executor of global undertakings.
Multipolar Model	Managed through the classical mechanism of the balance of power, whereby an allied reaction is initiated by a hegemony on other states that, in turn, consolidate their capabilities so as to counter-balance it until it withers away. However, contemporary global interaction is characterised by a weakening and, principally, a lack of concrete security alliances.
World Government Model	The UN is perceived to have the ability to act as a new world government, as it has managed to overcome the shackles of the Cold War and can thus become the policeman of the world. However, the UN is unable to play this role as it does not have the capability nor room to manoeuvre as a corporate actor since its actions are still determined by a conglomeration of states and has no independent source of funding.
World Legislative Forum Model	A world legislative forum of sovereign states, operating through the UN or other conferences and forums such as, inter alia, the General Agreement on Tariffs and Trade (GATT), UN Conference on Environment and Development (UNCED) and the UN Conference on the Law of the Sea (UNCLOS). The problem with these arrangements is that they lack a supreme authority and have no identity or belief system.
World Order Model	Wherein the world is divided into North-South or East-West based on the structure of belief and identity, instead of power. This model is based on a structure, which is primarily economic, at the pivot being the leading capitalist countries, exploiting the underdeveloped peripheral South through the international financial institutions such as the International Monetary Fund and the World Bank.
Market Democracy Model	Reflective of the Western values during the Cold War (market economy, human rights, and democracy), although not prescribing any ideological adherence to its adversaries and these values are viewed as being universal.
Regional Communities Model	There is no global structure, but the model is composed of regional structures having power and identity, withdrawn into their own hermitages, and with their own security arrangements. The model can nonetheless be useful as a framework for analytical purposes with regions being utilised as "conceptual baskets".

Source: Zartman, I. W. (1994). "Foreword." In Laïdi, Z. (Ed). **Power and Purpose after the Cold War**. Oxford: Berg. pp. xii – xv.

The main reason for the diminution of the politico-military domain is that the current international situation discredits the type of approach based on a classical view of the "security dilemma", wherein the international system is composed of equal actors (states) who pursue the same

objectives and resort to alliances as soon as the balance of power is threatened by one ambitious actor. The basis for this approach, according to Laïdi (1994:20–21), is that the de-coupling of power and purpose prevents competition that is focused on overall domination, which demands a tremendous amount of responsibility. Actors or units would rather seek for co-ordinated selective choices than to pursue overall domination that will require of them to shoulder certain responsibilities. Although states are still the most powerful actors in the international system, they, however, do not possess the monopoly of stimulus that influences the system. This is much more pronounced in the economic field whereby the application of the balance of power concept is inept due to "the fragmented nature of the states in international politics, and the imperfect coincidence of economic and political sovereignty" (Laïdi, 1994:21).

Therefore, the primary factor here is globalisation, which has imposed a number of shared responsibilities on dominant state and non-state actors alike, and correspondingly, there is no actor that can claim to dominate the entire international process – not even the United States in the military domain. This means that the multipolarity that would emerge will be "new, incomplete and heterogeneous" (Laïdi, 1994:21–22). What will make it new, according to Laïdi (1994:22), is that its various functions will not be categorically differentiated or that global power will be equally divided. Secondly, the process will be incomplete because it will not provide prevalence to any actor. Finally, it will be heterogeneous by creating relations between a variation of political actors.

Nevertheless, the state is still and will continue to be the principle organiser of political life internationally (Ayoob, 1993:45–47). Its role has been augmented by technological advances and by complex economic interactions, particularly in the Third World, where it is the main motive force for economic growth as well as the distributor of scant resources. Furthermore, in the East Asian newly industrialised countries the state has, through the utilisation of the state élite directed economic development through a prudent combination of motivation, complementation and systematic pressure towards unprecedented achievements. With regard to major industrial powers, the current economic debate is dominated by mercantilist attitudes that are more salient than what used to be the case in the Cold War period, where these attitudes were concealed behind the bravado of a free market. Despite the existence of other non-state actors in the international political economic system, the state still occupies the centre stage as the main actor in the relations that govern interaction within the system.

However, even if the state is considered to be the main actor in international relations, it actually exists and operates in three different types of worlds (Cooper, 1996:17–24), which further complicates the construction of the new world order (see Table 2.2 below). First there is a pre-modern world, which is still in the pre-state phase characterised by post-imperial chaos. The second part of the world, which is the modern world, is characterised by a classical state system, where the state still retains the monopoly of the utilisation of force and wherein powerful states might be enticed to try to subdue the chaos in their regional settings for a number of reasons ranging from economic, to defensive, to superiority complexes. The third type of world is the post-modern world where the state system is also collapsing into a greater order that is founded not on the balance of power system that emphasises the importance of sovereignty and the separation of domestic and foreign aspects. Here the emphasis is on "mutual interference in each other's domestic affairs, right down to beer and sausages" and there is great intrusion into areas that were previously the preserve of state sovereignty (Cooper, 1996:22–23). The shared interests, according to Cooper (1996:24), are also a result of a nuclear mutually assured destruction that has extended into the conventional strategic sphere.

Table 2.2 The Three World Types of the Post-Cold War Period

WORLD TYPE	CHARACTERISTIC FEATURES
Pre-modern world	This world is still in the pre-state phase characterised by post-imperial chaos. The state is unable to fulfil its criterion of possessing legitimate monopoly to utilise force, as it had in the past abused this prerogative and as a result lost its legitimacy.
Modern world	This world is characterised by a classical state system, where the state still retains the monopoly of the utilisation of force and has the potential and will to use it against other states. State sovereignty is recognised with its separation of domestic and foreign affairs, and as a result, external interference is prohibited and military might and raison d'état are the main elements of political life.
Post-modern world	In this world the state system is collapsing into a greater order founded on mutual interference in each other's domestic affairs and there is great intrusion into areas that were previously the preserve of state sovereignty. The prerogative of the utilisation of force legitimated to states is subject to international, but mainly self-imposed, constraints, where armed forces are, contrary to strategic logic, made transparent to other states. State sovereignty is no longer a supreme ideal since it is mainly sacrificed in areas of foreign affairs and security and the major aspirations of the system are to ensure common standards of domestic behaviour.

Source: Cooper, R. (1996). **The Post-Modern State and the World Order**. London: Demos. pp. 17 – 24

The security system within the post-modern world handles problems that caused the ineffectiveness of the balance of power, and, through the avoidance of war, it eliminates the consternation of war represented by modern technology. This system is more commensurate to democratic societies that

are open domestically and involved in international relations. Accordingly, the less dependent the system is on balance, the more inclusive it is to strong and large states. Difficulties encountered within the system are that democratic institutions are still firmly rooted in the territorial state, thus the packages of national identity and interaction are animated (Cooper, 1996:26). Other aspects of social life, such as the economy, law making and defence are increasingly being implanted into the supranational framework, whilst others such as identity and institutions remain largely national. This reflects the necessity of states to remain as fundamental units of international studies for the envisioned future. The post-Cold War era, according to Laïdi (1994:22–23), appears to be post-modern by breaking away from the modernist tendencies which are characterised by given model-types, linear in nature, with a predictable and direct causality. Therefore, it is currently difficult to view the international system as unipolar, multipolar or a-polar, but rather as a combination of all these polarities. Nonetheless, the most powerful actors are still going to continue to provide purpose in the new world order, as has happened in the previous orders (Laïdi, 1994:24–25).

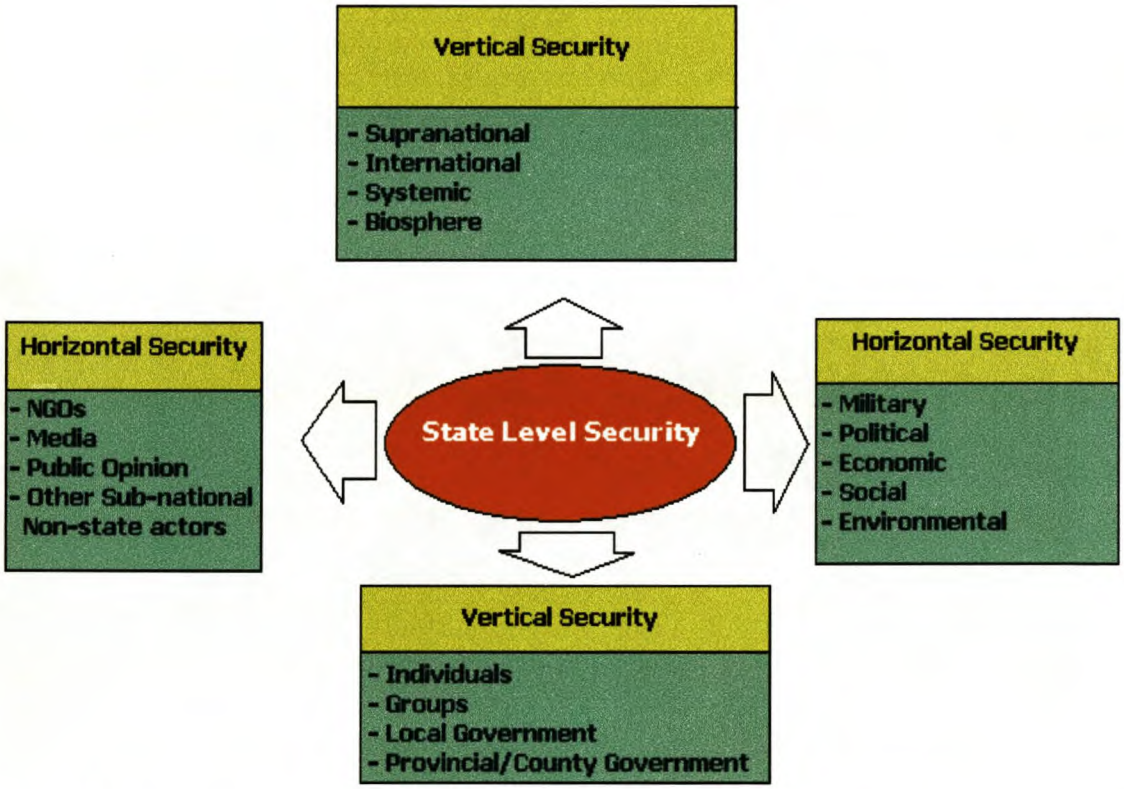
However, when looking at the notion of classical hegemony, to wit, an actor's ability to control his/her sovereignty; to identify and effectively utilise the available resources in pursuit of an enduring strategy to obtain leverage; and a capacity to mobilise support for his/her political actions, then a different picture is emerging. A post-modern structuring of hegemony is emerging, based on incoherent processes, pernicious rather than redistributive, providing more autonomy for sub-national actors instead of state agencies, and rooted on biased strategies rather than on any global arrangement. Therefore, the notion of hegemony, particularly in a regional setting, is bound to be tainted by many crevices. Firstly, the conception of a region as "an intermediate register" between the domestic and the global is no longer prevalent. Secondly, the region is no longer a launching pad for states towards global policy. "Certain choices which are recognised as regional are no longer the end result of a laborious balancing of the internal and the world-wide; they constitute rather the regional interpretation of a world strategy elaborated on the national scale" (Laïdi, 1994:27). Accordingly, a new definition of security is required, that is rather extended in order to encompass the heterogeneity as well as the unpredictable nature of the post-Cold War period.

2.3 BROADENING THE AGENDA OF SECURITY

2.3.1 Defining the Concept of Security

Conflict is an omnipresent and an inevitable phenomenon, and as such, its corollary, 'insecurity', according to Garnett (1996:8), is a "feeling of danger, which comes from uncertainty and instability. No one likes living with insecurity. It is psychologically unpalatable to almost everyone, and most human beings take whatever steps they can to minimize it". Therefore, as a deduction, the steps that human beings undertake to minimise insecurity are broadly termed as security. If this is the case, then what is the definition of security?

Figure 2.1 The Ubiquitous Concept of Security



There is no consistent definition of security. The various definitions espoused differ according to the respective paradigmatic and theoretical variations prevalent in international studies. "The ubiquitous idea of security", according to Rothschild (1995:55), "is of security in an 'extended'

sense." This extended security can be understood from four main dimensions depicted by Figure 2.1 above. One, the concept is extended below the state level, from the security of nations (in a communitarian sense) to the security of groups or individuals. Two, it is extended upwards, to wit, from the security of nations to the security of the international system, the supranational level and up to the biosphere. Three, extension is also understood to be horizontal, meaning that security, in this sense, covers the military, political, economic, social and environmental milieus. Finally, the extension of the political responsibility for ensuring security from nation-states (who are still politically pivotal for ensuring security in all its dimensions), upwards to international institutions, downwards to regional and/or local governments, and sideways to non-governmental organisations, the media, public opinion and to other actors convenient, depending on their field of interest. However, this ubiquitous idea of security does not provide a lucid definition of the concept because, according to Buzan (1991:7), the concept is still underdeveloped.

If security is understood from its general definition: "as the pursuit of freedom from threat", it becomes easier to comprehend it in the context of the international system (Buzan, 1991:16). Buzan, therefore defines it as "the ability of states and societies in the system to maintain their independent identity and their functional integrity" (1991:19). States and societies pursue security in harmony or in contention, with the essence being the struggle for survival. The pursuit of security is dependent on the exigency of the issue at hand, whereby the lack of exigency negates the need for such an issue to be labelled as a "security" issue. Another important aspect, according to Buzan (1991:19–20), is on the levels of analysis of the issue at hand, depending on the priority it deserves, for example, the personal security of individuals is secondary to the security of human collectives. That is the reason why within the international system, the security of the state becomes pivotal. Other non-state human collectives, such as those of ethno-national groups are also important as units of analysis. However, the anarchic nature of the structure of the international system (without central authority in virtually all its organisational dimensions) mandates the state, as its preponderant unit, to maintain and preserve its own national security.

Accordingly, between the international and domestic levels of analysis, a close relationship exists, and actually, the differences among the various levels are only employed for analytical purposes. They are employed as tools to reflect the institutional arrangements found in the international system. Hence, Underhill (1994:20–21) asserts that there is only one "politics" in the international system: the politics of conflict within the ambit of the state. The state becomes the centre of focus

in a state-society complex, whereby it manages the domestic and international constraints through internal policy-making and inter-governmental consultations. Therefore, within the auspices of the state, there are five inter-linked sectors wherein human collectives are concerned about their security (refer to Figure 2.1 above). Firstly: economic security that relates to a state's access to resources, finance and markets that enable it to sustain acceptable levels of welfare and power. Secondly: political security that relates to the state's organisational stability, and the legitimacy that is bestowed by the system of government and its ideology. Thirdly: military security that concerns the state's ability to balance between its offensive and defensive capabilities as well as its capacity to probe and discern other states' intentions. Fourthly: societal security, referring to the ability of the state to sustain its culture and identity within congenial levels of progress. Finally: environmental security that refers to "the maintenance of the local and the planetary biosphere as the essential support system on which all other human enterprises depend" (Buzan, 1991:19–20).

There are three significant conditions that are imposed on the security concept, according to Buzan (1991:22–23). Firstly, as the highest governing authority and the framework of order within the international system, the state becomes the primary referent object of security, hence the preponderance of the policy of "national" security. Secondly, as a highly relational and interdependent concept, external threats rather than domestic insecurities mostly dominate the national security agenda. Finally, from the logic of anarchy, security is either dependent upon harmony or hegemony, which therefore, makes it to be a relative, rather than an absolute concept. If the system of anarchy is negated, it will, consequently, require the redefinition of the security concept. Since states are the main policy-makers, pragmatically national security incorporates other levels of security, be they individual or systemic. Therefore, security implies its classical meaning – national security – while broadening its relevant dynamics at international and sub-state levels. Governments, and no other agencies, are at the pivotal point between the sub-state and the systemic dynamics. However, in the real world, policy-makers have little to do with the actual problematic of security, but nevertheless, have a substantial impact in the formulation of policies that are "produced in the name of national security. Because policy has a powerful impact on security problems, ... the policy-making process itself becomes a major factor in the overall character of the security problem" (Buzan, 1991:328–329).

For Haftendorn (1991:5–6), the concept of security, regardless of how it is referred to, corresponds to particular values, threats and capabilities that present themselves as challenges. The historical

evolution of the concept is connected to boundaries of the extension of the global system, "from one of regionally bounded nation-states, to the highly interdependent political systems of the industrialized world, to a global community of people" (Haftendorn, 1991:5). This progress is a result of advances in communication, technological improvements in the art of war, and industrial growth and commercial development. The concept of national security emerged historically with the emergence of nation-states in the seventeenth century, with its focus on national survival. The nature of the international arena pitted each state against another with the interstate system lacking the common rules and institutions to ensure the enforcement of law. The state, as a sovereign entity, had to protect and safeguard domestic life, property and peace against external threats.

However, when viewing the security agenda from a systemic perspective, Buzan (1991:175) argues that the integrated rational patterns and general structures are emphasised in terms of interdependence rather than when viewed from a divisible perspective of national security. Therefore, these two angles are linked at the state, in its individual capacity, and the system as a whole, where they are interconnected. This is obvious when viewing the intensity of support that strong states confer on the international system as compared to the weak states; and also the inefficiency and implausibility of security policies that emphasise the significance of the state more than the system. This therefore leads to the prevalence of the global security agenda as it encompasses the systemic level wherein it becomes more congenial to analyse national securities in relation to each other rather than individually (Buzan, 1991:23).

Kolodziej (1992:6–9) defines global security as the threat or the utilisation of force so as to be able to govern globally. In the absence of an agreement as to how to govern globally, coercion, or its threat, is used to manage or resolve differences. The global security problem is defined by the institutionalisation of the structures of coercion as well as the ascension of the administrators of force who plan and execute coercive strategies. Any global economic system is supported by a framework of security that is reliant on force or its threats so as to demand conformity towards the installed and regulated economic objectives and interests.

After studying the Soviet case, however, it became clear for Kolodziej (1992:10–11) that the agenda of security can not be restricted to issues of force and threats. Other factors on which traditional geo-political structures of security depend have to be covered, especially those that ensure the efficient and efficacious operations of civil economic society. The state, therefore, can be a threat to

the freedoms of individuals and collectives as any other external aggressor. Furthermore, the inability of the state to settle armed conflicts within civil society increases the danger for those who are divided along racial, ethnic, ideological, religious and other communal identity lines. Thus, even within the state, security has to be interpreted as a global security issue: as human rights violations and civil rights are currently regarded as issues of global security.

What should be noted is that individual and collective security do not depend solely on the state as security issues are encountered at all levels of life, which makes the concept of security generally applicable to all social sciences. The state is a form of "specialized bureaucracy", an institution alongside others, which monitors and regulates risk, as a provider of security for groups within society (Shaw, 1993:174–175). Secondly, the state and its system, become the context within which risks against individuals and collectives are generated. Thirdly, the state is uniquely bestowed with sovereignty, which gives it monopoly of legitimate violence; thus it becomes dominant or pivotal amongst other institutions of modern society. As states begin to "fracture", some of its attributes become attached to supra-state institutions and others to sub-state collectives or structures.

Therefore, sovereignty is no longer based only on one institution called the nation-state or state-nation, but it has become shared both below and above. The system of inter-state relations constitutes a risk environment of institutions that are monitored by the players – states, collectives and individuals – and in turn, the players are influenced by its operation. The inter-state system is influenced by other environments existing at the global level – economic, financial, ecological, etc. – and in turn influences them while at the same time it interpenetrates other systems that operate within the state. The global security agenda therefore misses the dimension of society, to wit, the global flow of social relations within which the inter-state system floats.

2.3.2 Arguments for the Broadening of the Security Agenda

Since states and individuals are mainly threatened by non-military phenomena, some analysts have suggested that the concept of security should be broadened to include health, environmental and other issues. These proposals, according to Walt (1991:213), are a reminder that it is not only military issues that demand attention, as military power is not a guarantee for humanity's well-being. Kolodziej (1992:26–28) also concurs that the agenda of security should be widened, deepened, and methodologically varied and sophisticated than what the neo-realist agenda

prescribes. The concept of security should not be reduced nor confused with the concept of the balance of power but must be connected with the struggle to achieve order and welfare through legitimate means, such as the state and other societal institutions at sub-state and supra-state levels. These institutions and governing bodies are legitimately viewed by their members as being authoritative and protective.

According to Buzan (1991:368–369), there are three elements that provide the rationale for adopting a broad agenda. Primarily the mounting population density generates a need for changing priorities when addressing issues such as threats and vulnerabilities that define the problem of security. This is more visible with regard to developed states, where the aspect of nuclear deterrence has mitigated the fear of military attack, and partly because of the emergence of security communities, and mainly, the end of the Cold War. Indeed, the failures of the League of Nations and the UN can be attributed to the prevalence of national security interests over those of collective security – national survival became prominent to global security or world government (Haftendorn, 1991:8–9). States were required to maintain large military forces and a stupendous amount of weapon systems that could meet the perceived threats. The unavailability of global institutions to ensure amiable inter-state relations compelled the structure of the international system to establish patterns of alliances and nuclear deterrence to regulate co-operative and conflicting relationships. As it became obvious that the threat of a nuclear holocaust could not be averted, emphasis shifted from national security to a paradigm of global security.

Global security, as a concept, was based on the consideration of mutual interests as a means of survival under conditions of nuclear deterrence as well as recognising that the other party will be inhibited from attacking as a consideration of self-interest. The implication was that the security of one state was inter-linked to that of other states or of one other state and therefore there was a relationship of security interdependence among states in the system. This recognition of security interdependence led to the emergence of regular patterns, which as a result led to the evolution of international regimes – which became patterns of security co-operation in a situation of anarchy aimed at ensuring constraint in the behaviour of states. These expressed themselves in the form of institutions such as alliances, organisations and agreements (Haftendorn, 1991:9). Nonetheless, Buzan (1991:370) maintains that the reduction of military threats also put into salience other types of threats such as vulnerabilities related to the insecure operations of the international market economy. Jones (1996:206–207) also agrees that the end of the Cold War highlighted the

deficiencies of a security agenda that was based on a narrow military conceptualisation. In particular the demise of the Soviet Union and the problems that emerged along with its dissolution, some of which had been in existence but overshadowed by the Cold War, legitimated a need for a broader security agenda. Amongst others, these sources of conflict included threats that emanated from environmental degradation, international migration and the resuscitation of ethno-nationalism.

Walt (1991:213), however, cautions that at the same time such a prescription may excessively expand the agenda of security studies, wherein other issues such as "pollution, disease, child abuse or economic recession" will be construed as threats to security. This, according to Walt (1991:213), would destroy the intellectual coherence of the field and thus render it ineffective in solving important problems that it is supposed to address. Furthermore, the existence of other hazards does not eliminate the danger of war, with the current cost of armed forces as well as the risks of modern war, the scholarly community will be irresponsible to overlook the central issue of the field of security studies. Freedman (1993:204–205), nevertheless, argues against the idea that research on the deployment, employment and development of military force should be regarded as the study of security. Instead this is the study of strategy, to wit, that Strategic Studies is the domain of understanding the connection between military means towards political objectives.

The second element that provides the rationale for adopting a broad agenda includes the qualities of the concept of security which are politically beneficial by negating most of the assertions of Realism and Idealism; the action priority that the concept creates by demanding attention from governments and the population at large; and the national and international dimensions attached to its broadening, diminishing the military element whilst elevating its other domains, as well as providing a "balance between the national and collective security interests" (Buzan, 1991:372). There is an element of naïveté in the suggestion that regional or global security systems are peaceful by virtue of being broader than pure power arrangements or because the level of analysis has been extended. The existence of anarchy is at the core of the state system, at regional and global levels, and therefore economic disturbances and the consequential political dissatisfaction at the domestic level may influence and intensify the struggle for power amongst states and collectives thus plunging a region or the world into a war. Therefore, the concept of security has to move beyond the construction of a new make up for power, which is based on military power. This can be an essential condition to manage anarchy, but not the adequate one. "Economic and political assurances, responsive to

societal demands must also be fashioned to ensure stable and legitimate security systems" (Kolodziej 1992:29).

The final element is the integrative capacity that the concept provides by combining the disparate and regularly detached theories and analyses of the realm of international studies, ranging from international political economy to special areas of science and technology (Buzan, 1991:372). Accordingly, a global security system should evolve to accomplish four critical functions. Firstly, it should provide a perennial order among the units in the system through coercive power. Secondly, it should become the arbiter among competing and conflicting individual or collective aims, demands, interests and values within international and domestic civil society. Thirdly, the perennial order that it provides should facilitate the allotment of resources, goods and services to persistent demands and increasing popular expectations. Finally, it should ensure the legitimisation of order and welfare, through the adoption of moral and legal principles and norms that must be accepted to be authoritative by all the players in the system. A state security system or a global security system that fails to perform these essential functions is doomed: it is vulnerable to threats of instability, antagonisms and probably armed conflict and war. From these bases, therefore, global security policy can be defined "as the pursuit by groups and states to influence and determine the overall structure of the international security system or its component parts in preferred ways" (Kolodziej, 1992:11–12).

2.3.3 Critics and Attempts to Develop a Broad and Balanced Global Security Agenda

Two sets of critics are objecting to the broadening of the security agenda. Firstly, the traditionalists, mostly proponents of a state-centric perspective who argue that this will lead to a loss of focus. Secondly, certain commentators who are not contented with the elevation of issues such as environmental degradation to being security issues. Most of the latter are scholars of strategic and security studies who maintain that by broadening the security agenda, particularly the inclusion of non-military issues, incapacitates the intellectual cohesion of these fields of study. Others are concerned with the danger involved in the inclusion of economic and identity issues in the agenda. The danger, according to Jones (1996:207–208), lies with the enhancement of confrontation-orientated attitudes and the militarisation of these issues based on the traditional conceptualisation of security as "national security".

Proponents of a state-centric perspective, base their contention on two justifications. Firstly, they argue that empirically the state mediates all the security dynamics at international or sub-state levels. Related to this assertion is that the state can provide individuals with security, even though it is usually regarded to be the cause of insecurity for its citizens. Their argument is that it is not states *qua* states that are often the cause of such insecurity, but instead particular types of states. Strong states co-existing in an environment of a "mature anarchy" (a developed international society) can guarantee individual security (Jones, 1996:210–211). Ayoob (1995:8–11) also believes that as developments in other domains, ranging from the economic to ecological phenomena, threaten the state's physical character (the territory and the population) and its socio-political character (primarily, the idea of the state as shared by its populace and secondarily, the institutions that generate its physical expression), then those variables have to be considered as having security implications. If they fail to meet these criteria, then they should be analysed as events or incidents far removed from the realm of politics and security. Security, according to these arguments, should be approached in a strictly political sense, which relates to the security of the state, particularly vulnerabilities that endanger state structures, its regime and its physical traits.

Broader definitions of security, in this context, tend to become too pliable, so as to loose their analytical utility. This is specifically applicable to the Third World, where a categorical political definition is a valuable analytical tool due to the consistent challenges that the legitimacy of the state and the regime encounter and the inability of the political system to meet the demands for economic redistribution and political participation. The historical crossroad of the Third World state and its comparative infancy, Ayoob (1995:11–12) argues, define its perception of domestic and external threats. The definition of security is therefore, compelled to meet two criteria. Firstly, it has to transcend the traditional western definitions based on external threats and a military focus. Secondly, it is bound to focus on the political realm and will only extend to other realms when they threaten to have an impact on political consequences.

However, critics of a state-centric approach respond to these assertions from different perspectives. For instance, advocates of the individual-centric (liberal) perspective, on the one hand, according to Jones (1996:212), argue against state-centrism on the grounds that it is a confusion of ends and means: states being the means to provide security and individuals being the ends that security is provided for. They argue that threats are better viewed from the perspective of individuals, specifically those that relate to basic human needs such as basic material necessities for subsistence.

Furthermore, collective arrangements by human beings are also beheld as means towards obtaining individual security approaches.

On the other hand, as a central aspect of human experience, identity – of which national identity is the most eminent – is of paramount concern to security analysts. These are collective phenomena, whereby the whole is more important than its individual parts. Various identity-centric views promote the varying types of identities, such as ethno-national, religious and social-economic groups. Critics of this perspective argue that there are dangers with the identity-centric conceptualisation of security: that an exclusionary group-identity will be a *prima facie* resemblance of a state-centric standpoint since it will also reflect an "inside/outside structure of anarchy" (Jones, 1996:212–213). However, Jones (1996:213) deduces that these dangers are not indomitable since identities are overlapping, to wit, an individual has a number of identities that he/she uses at different times and situations for purposes of convenience.

By way of illustration from a perspective of critical theory, Jones (1996:215) maintains that security should be understood to be based on some notion of emancipation, to wit, that security theories should be focused on liberating those who are made insecure by the prevalent order. For the insecure, security is provided through the removal of physical and human threats which deny them the ability to achieve their goals and emancipation means freeing them from those threats. These threats *inter alia* include war, poverty, poor education and political oppression. Critical theorists argue that it is neither power nor order that provide true security, but emancipation. Jones (1996:216) presumes that critical theory provides a good starting point for the development of emancipatory critical security studies which is based on a people-centric instead of a state-centric or an individual-centric approach to security. Such security studies should have as their foundation an emancipatory social theory unencumbered by spurious scientific objectivism. An emancipatory social theory is more aligned to critical social movements instead of the state and "attempts to denaturalize and question 'commonsense' assumptions rather than accepting a reified, ahistorical account of the present" (Jones, 1996:217).

Although the concept of global security seems to offer a better prescription to contemporary security issues than what is offered by the notion of national security, Haftendorn (1991:10–11) contends that it, however, has certain conceptual flaws which make it difficult to apply to modern global conditions. Primarily, its origin, particularly the focus on nuclear parity and deterrence as well as its

ethnocentric nature makes the concept to be currently based on perceptions and values of analysts from the United States. Furthermore, it fails to account for military contingencies such as internal armed conflicts that occur in the Third World, and moreover, it overlooks the fact that threat perceptions have changed from being focused solely on military attacks towards other threats such as economic and ecological crises. What should be noted, therefore, is that it is not only state practitioners who have the prerogative to delineate threats and the appropriate responses to them (Jones, 1996:209). Other players within the domestic, international, or transnational fields have done that and continue to do so with immense political, economic and socio-cultural implications.

This therefore justifies the broadening of the security concept since it touches on the day-to-day customs of individuals, social groups and organisations. 'Peripheral' issues, such as environmental and food security, are more substantial, significant, and immediate threats to the majority of the world population than issues of inter-state war. However, the danger remains that elevating these issues into 'security' issues might lead to their militarisation and as a result impede on their resolution (Jones, 1996:209). Therefore, the utility of the concept should not only be limited to a specific regional administration, such as, post-modern Western market democracy. Instead, Haftendorn (1991:11) proposes that the hitherto neglected dimensions of security should be included by creatively and competently applying them to the different sectors, areas and regions where feasible.

The broadening of the agenda of security has to be taken as a *fait accompli*, particularly since there are various actors contending for the centre of the conceptualisation of security. This is based on the fact that no actor in the international system can actually claim to be the sole determinant of the threats and vulnerabilities that individuals, collectives or states encounter regarding their own security. In fact, a question may be asked as to whom the authority to define security should be ascribed? Can individuals, collectives or the governing bodies that run the state claim to have the sanction to define what security is or to delineate the various threats to security? Can they do that on behalf of other actors in the system or only for their own spheres of influence and/or responsibility? Ultimately answers to these questions will always reflect the paradigmatic approaches of those who respond to them; and obviously a blanket approach is implausible besides the broadening of the agenda that will encompass all the varying and sometimes differing perspectives. Albeit it will not be satisfactory to all the actors in the system, a broadened agenda could provide a workable solution to the complexity of the post-Cold War global security situation,

which, nonetheless, appears to emphasise the political economic (more than the military, the social, and the environmental) dimensions of security.

2.4 INTERNATIONAL POLITICAL ECONOMY AND THE PARADIGM OF GLOBAL SECURITY

The economy and politics are one reality that is analysed as different sectors. It is easier to analyse them through different lenses/viewpoints since it brings one into clear focus and at the same time pushing the other aspects into the background. However, these sectors are so intertwined that their existence cannot be divorced. One way to analyse them together is to look at how they interplay, particularly when it comes to the critique of international political economy. The non-existence of a central political authority in a system of states becomes a necessary condition for the emergence of capitalism and this can be interpreted as a "natural political expression of an operating capitalist world economy" (Buzan, 1994:89–90). Contests prevail within the structures of the market and the greater political economic order and, consequently, they determine the changing patterns as well as the diversified and distinct institutions that emerge within the international system. These institutions, Underhill (1994:18) avers, become responsible for the management of the processes of conflict and co-operation within the system.

Viewing these institutions in this context, Underhill (1994:18–19) contends that it becomes clear that the market is a political mechanism through which certain outcomes are achieved: certain sectors of society benefit and others loose from the interaction that occurs within it. It thus becomes a political institution through which new political and economic structures and patterns are established, as well as the negation of older ones. If the market and anarchy are "mutually constitutive phenomena", Buzan (1994:90) maintains that this makes competition within anarchy to be intrinsically ambiguous. From an economic perspective, market competition is permitted to develop by a fragmented international political arrangement, which at its phase of superior performance promotes the pursuit of wider markets through the expansion of domestic economies; and to aspire to imitate its technique of power-enhancing performance by other states. Economic actors are thus given more leeway by an anarchic political structure since it ensures their freedom of movement to and from various governments depending on their congeniality.

For it to succeed, the capitalist economy requires that market competition should shape the behaviour of individuals and firms, always rendering their survival and prosperity on their propensity to compete efficaciously. Continuous insecurity is the basis on which all the units persist within the market, unless state-managed development and protectionism intercede to provide temporary evasion. This intervention is also short-lived when the economy becomes inefficient due to its demand for external markets as well as when it fails to bolster the state in its international bargaining processes. When under pressure from disparate economic development criteria, the anarchic global system tends to brew a contagious tension of the power-security dilemma wherein powers threaten each other and the corresponding measures taken by the other powers are seen to be threatening (Buzan, 1994:90–91).

Competition takes on two forms: the struggle for political survival is complemented by competition for wealth in the market, both of which consequently stimulate technological innovation and subsequently redefining the modes of economic and strategic behaviour (Buzan, 1994:91). Wealth creation and political power, according to Underhill (1994:17), have been interrelated throughout the history of the modern international system and as such, all political conflict within this system has been focussed on these two aspects. Within this situation of economic and political competition, the state, as an individual, has to struggle for the means to survive, and if it does not possess the necessary resources to ensure this, then its access to trade becomes an essential element of its security. Any form of interference with its supply circuit is a direct threat to its power, welfare, and presumably its political survival. Furthermore, states need to constantly adapt towards developing trends in the international system or else they suffer the gradual erosion of their power as well as become vulnerable to those that continuously achieve success (Buzan, 1994:91–92). Therefore, a state's relative economic performance is closely intertwined with its condition of national security, since economic growth pivotally determines its position of power within the international system and thus becomes an essential element of its security.

Concurrency exists amongst scholars of international political economy that a complementary and deep-rooted relationship occurs between the management of both political power and the market economy (Underhill, 1994:17–18). Most of these scholars also share three basic assumptions to this end: firstly, that these aspects are inseparable, specifically in international relations. Secondly, that economic structures, particularly those of the market, are both established and transformed through politics. Finally, that the competing socio-political interests, which are the focus of political

conflict, generate or result in the existence of specific economic structures and processes, both at domestic and international levels of analysis.

The domestic and international levels of analysis, thus, become distinctively artificial as a growing degree of interdependence between states and their constituencies depicts the international system. This is in reality where the global economic system contrasts with the political system. According to Buzan (1991:230–231), both systems have the ability to present a more balanced structure wherein significant factors of division are paired with mighty integration forces. In its breeding of fragmentation, such as national economies, firms and classes, the global economy is bound in its totality by patterns of trade, production, finance, communication and transportation. The pursuit of trade, in order to augment efficiency and welfare, develops dependency patterns which provide access to market pressures to deluge the whole system. This makes the global economy to be the main constituent as well as the main result of the increasing density and interdependence characteristic of the contemporary international system.

2.4.1 Ensuring Economic Security within the International Political Economy of Market Democracy

There is no clear demarcation between international economic and security concerns such that it becomes even more difficult to determine as to who the enemy is and what exactly security involves and this, according to Cable (1995:305–306), subsequently creates a conceptual vacuum. As a result of improved communications, capital flows and trade, economies are becoming interdependent and within a liberal global economic system states become vulnerable to external economic occurrences. They become dependent on foreigners as an essential outcome of becoming immersed in global markets. Liberal capitalism is characterised by uncertainty and risks that is the basis of liberty and preference that also, breeds insecurity for individuals, groups, firms and states. Capitalism reveals the elusive quality of economic security since it is a competitive system whose dynamic "depends on the interplay of threats, vulnerabilities and opportunities within the market" (Buzan, 1991:235). Absolute security within such an environment cannot be guaranteed and as a result only relative security is possible.

Behaviour within a liberal capitalist economy is shaped by the market, wherein the productivity and affluence of the system is determined by the relegation of the less innovative and incompetent units

in favour of the most efficacious and imaginative. The competitive nature of the capitalist system proclaims permanent insecurity for all the units participating within it, and without competition the system is impotent. With its triumph over communism after the Cold War, capitalism could claim to be the only system at present that could efficaciously generate wealth and innovation and simultaneously guarantee political pluralism (Buzan, 1991:235).

The only way that units can guarantee their economic security within such an environment is to decrease their vulnerabilities by reducing their interdependencies with the resultant autarky disrupting the system "by threatening the division of labour and economies of scale that make production efficient. Larger units can evade this contradiction for longer than small ones, but ... under modern conditions even the biggest units become inefficient if they pursue too great a degree of self-reliance" (Buzan, 1991:235–236). According to Cable (1995:306–307), economic security can be defined in four ways. Firstly, it can refer to those elements of investment and trade that can directly affect the ability of a state to protect itself, such as freedom to procure weapon systems and their accessory technology, non-interference with military supplies, or the leverage attained by its adversary through obtaining technologically advanced armaments. In practice this situation becomes more compounded with the aspect of dual-use technologies, or when GATT (the General Agreement on Tariffs and Trade) rules are not applied to the transfers of armaments, as governments become concerned with them falling into wrong hands, while at the same time persuading others to purchase the weapons produced only by them. The ambivalence inherent in this situation makes the definition of security threats ambiguous.

Secondly, Cable (1995:307–308) claims that it can also refer to those policy instruments that are adopted for the purposes of aggression or defence, such as trade embargoes, economic sanctions, investment boycotts and restrictions of energy supplies. Thirdly, relative military capability can be affected by relatively poor economic performance and therefore requires the adoption of economic policies that are going to boost economic achievements. Protective trade policies are a typical characterisation of this form of economic security. Finally, it refers to a fear of a certain degree of global economic, social and environmental instability. This is associated mainly with the insecurity found in any market economic system, and other potential threats such as illicit material trafficking, crime and toxic waste dumping.

Consequently, it becomes difficult to compile a list of such depraved activities to include them into a national security agenda. The problem is that to include a lot of other aspects that threaten human life may stretch the concept of security too wide so that it may start to loose meaning and as a result become unmanageable (Cable, 1995:308). However, actors can impair the overall efficiency of the system as they try to reduce their vulnerabilities, and if they neglect their security concerns, they risk being exploited by the well positioned in the system. This, according to Buzan (1991:238), is the incessant contradiction that individuals and governments struggle to overcome so as to attain relative success, which is more expedient than relative failure.

The most affected are firms as they are entirely economic actors, and as such, are unable to evade the essential contradictions of economic security. Their security, Buzan (1991:238–239) argues, relies on being competitive in the market or through being a monopoly or seeking political protection for their market share. However, the last option has an inherent contradiction, as their security interests will clash with the welfare interests of the consumers. Protection in this sense is claimed by firms on the basis of national security, to wit, that they are maintaining areas of strategically significant productive capacity that the national economy cannot do without, and these might be lost to foreign competitors. It therefore becomes the prerogative of the policy-makers to decide whether the higher costs, and usually mediocre products, are protected from the competition of the market. Policy-makers are therefore compelled to adopt a specific standpoint regarding the manner in which they perceive and respond to these contradictions of economic security.

According to Garnett (1996:9), "human greed is infinite"; hence it is always a zero-sum game, whereby the cupidity of some is always gratified to the detriment of others. The contention is that wealth, like military security and privilege in general, is always to the disadvantage of others. This implies that military security of the strong is always to the damage of the weak; and economic security of those who have is catered for by the economic insecurity of the have-nots. Economic and cultural globalisation, based on Western standards, has brought about a more established and constricted world order, with the abundance of legal norms in the international system. This, according to Laïdi (1994:27–28), is more salient in economic relations whereby concepts of autonomy or choice are being inundated within interdependence. Indeed, the prospects for business manoeuvrability are dependent on the rapidity of responses to external conditions instead of preference and the asymmetry that exists between the capitalist centre and the periphery is much more deleterious to the latter.

Therefore, a multinational security arrangement of the core capitalist countries, for instance, might not consider intervention as a solution to problems in the periphery (Buzan, 1994:98). This, according to Laïdi (1994:28), may be due to inward looking policies regarding economic and political restructuring, and a perceived lack of threat or an attitude of apathy arising from previous failures to provide solutions to the problems of the periphery. The imbalances of the centre, therefore, are being transmitted to the periphery, with the boomerang effects being refined so that they do not impact on the former. This is also reflected in the manner in which Third World and Eastern European countries are obliged to introduce political and economic reforms in order to obtain foreign economic resources.

At the same time, intervention, as opposed to isolationism, Buzan (1994:98) contends, can occur as a result of ideological domination, an intention to protect essential resources such as oil, or an intention to impose Western standards that are believed to be universal. It is averred, in theory, that there is no other strategic or economic option to standards based on Western market democracy, since economic and political reforms based on the market are invincible. Laïdi (1994:28) also agrees that the post-Cold War era provides one primary peculiarity: "it no longer rests on an essential principle that is capable of ordering united and simultaneous hierarchy and purpose, as was partly the case during the Cold War". Indeed, the ushering in of the post-Cold War order brought about a new international fact of world, "market democracy", which has become the global array, "the legitimate problematic of the international system" (Laïdi, 1994:29).

On the one hand, the main sphere of the problem of international economic security currently, according to Buzan (1991:249), is the truncation of the global functioning of the market and the fragmented nature of political authority under the international structure of anarchy. Political authority is curbed in its ability to manage the scale of outreach of the international economy, and only a world government can achieve this. This fragmentation of political authority and the curtailment of the global functioning of the market render the international political economy to suffer incidents of disorder and a possible breakdown. On the other hand, world time legitimises the ideology of the market and democracy, as its corollary, as well as affirming their organic connection with development. A virtuous circle is established consisting of development (progress), equity based on the market, and liberty or democracy. This process is also agitated by the ideological and technological milieu within which it occurs, wherein there is no alternative that has the capacity to

challenge the preponderance of market democracy or any hindrance to its global dissemination. Its prevalence is therefore seen as a necessary condition, having the power to convert society to its "universal and secular" benefits (Laïdi, 1994:29–30).

Market democracy, therefore, reflects a political construct, an ideal or system, which does not provide any ready-made models. Its correlation is rooted in the relationships between probity and efficacy and that between democracy and growth (Laïdi, 1994:30). However, the mutually constitutive nature of international anarchy and capitalism becomes an ideal circumstance for the sustenance of the current international political economy. Accordingly, Buzan (1991:249) maintains that it forestalls the possibilities of the establishment of a comprehensive government that might either fail to administer the global economy or hinder the forces that drive the market economy. Hence, the politics of the state play a pivotal role in terms of mediating between the political and economic domains, as well as between the domestic and international levels of analysis. According to Underhill (1994:34–35), the comprehension of the politics of the state, therefore, means understanding the problem of international political economy. Failures that are observed in most of the theories of international political economy are linked to, firstly, trying to procure the state from the other structures of society; and/or secondly, reifying the state to become a conscious, self-regulating and rational person.

For instance, realists pursue the integration of the international economy with the fragmented nature of political authority through the limitation of the scope of the global market. Emphasis, Buzan (1991:252–253) avers, is on the virtue of the domestic economy and the preponderance of state objectives, and as a result, stress the importance of protectionism in order to preserve these goals. They, however, do not denounce the creation of economic spheres of influence where their economies dominate at the centre. The realist viewpoint argues that with regard to the distribution of capabilities that might lead to vulnerabilities, a qualitative leap in innovative capability may provide Japan or Western Europe with the status of being a hegemon or a superpower. Those importers, whose economies possess the infrastructure, networks of policy and economic connections, may benefit from technology diffusion in order to augment their military capabilities (Crawford, 1994:53).

Liberals, by contrasts, pursue the creation of a unified, broadened, and interdependent international economy surpassing the confines of anarchy and its fragmented nature in order to encourage

worldwide market interaction. For liberals, Buzan (1991:252–253) contends that the global market is attractive due to its ability to promote economic efficiency, and moreover, it promises prosperity for those states that participate in it in order to utilise to the maximum their comparative advantage. It also ensures relatively more security in terms of reducing antagonisms over territory, which conditions the attainment of wealth to direct control over markets and resources. The rise of trading states, according to Crawford (1994:53–54), devoting fewer resources to defence will ultimately overlook the need to maintain policy networks that are necessary for the rapid translation of civilian or commercial innovation into military power. This will result in the fear of threats and vulnerabilities withering away and subsequently diminishing threats and vulnerabilities in inter-state relations, thus strengthening the urge towards the creation of an international society of states.

Interdependence may result in threat reduction, which, in turn, may reduce the power of states, as policy-makers will not have the legitimacy to expand defence expenditures without being able to pinpoint the threat (Crawford, 1994:54). Even currently, the state is not seen as an important decision-making agent wherein significant processes occur regarding social politics, economics and the international system itself (Underhill, 1994:35). The link between the state, economic structure, and political contests is found from the self-interests of the various actors or agents – individuals, groups and corporate economic entities – that contend within both domestic and international political institutions. Policy preferences of different actors, depending on their position in a specific structure, reflect these self-interests.

Therefore, global institutions, which exist within an environment characterised by anarchy, consist essentially of the state as well as intergovernmental bargaining and international regimes, whereby the politics of the state are projected into the international realm (Underhill, 1994:36–37). The self-interests of the various individuals and groups that contend within the domestic domain depend on their political articulation and institutionalisation to be projected into the international domain. Hence, they are a link between the economic structure and the politics of the state and the international system. The ability of these interests groups to enjoy political power within the state as well as their position regarding institutionalised political resources determine the effect they have to influence state policy. Simultaneously, the ability of the specific state to project its preferences into international institutional arrangements determines the extent to which these dominant self-interests will have an impact on the international system.

Viewed separately, the international economy gives a picture of being a structure and having a dynamic of its own, wherein businesses and individuals constitute its units and trade and finance being the interactions between the units within the structure of the market (Buzan, 1991:231–232). The market's inherent dynamics have, over time, generated a potent tendency towards wealth creation and acceleration as well as an aggregation of activity which have resulted in the economic system correlating, and even surpassing the concomitant conglomeration of activity within the political realm. Consequences have been effective on locally rooted economies, along with increased exchange relations between these economies, leading to a global economy in which economic patterns of production, consumption, finance and class function. For the cognisance of these patterns, a global contextual analysis is required. This global economic expansion contrasts with and fabricates a conducive environment for the continued international political fragmentation by transcending the state system to such an extent that international capital has become unconstrained by state interests.

If the international economy is viewed as a subject of the international political system, the significance of national economies as critical levels of analysis is salient, as the international economy becomes a part of the complicated intercourse between states. Buzan (1991:232) maintains that the economic role of the state becomes primary as the economic role and power of governments is emphasised, as economic priorities become nationally defined, and as connections between economic activity and state power are stressed. Individual states increasingly loose direct control over the market system as it becomes increasingly internationalised or transnationalised and this engenders a greater requirement for the understanding of the interaction between the international and domestic levels of analysis. Nonetheless, states remain at the pivot of the decision-making processes within the international system, as well as attending to the demands of the domestic political environment (Underhill, 1994:19–20). They, nevertheless, do not possess all the economic resources to determine the content and bearing of the international political and economic order, in accordance with their individual predilections. Therefore, they have to contend with other states and actors concerning issues that once belonged solely to the domestic domain.

The current global economy, however, reduces the economic choices that the state can assert as its domestic constituency faces intensifying competition with the other market forces as the economy becomes increasingly transnationalised (Underhill, 1994:37). Nonetheless, the anarchic setting of the international system requires the state to play a pivotal role in managing political conflict over

the structure and institutions of international interaction. Indeed, states are obliged to interact with each other, thus creating a favourable environment for a particular form of behaviour within the international political system (Buzan, 1991:232). Moreover, the political and economic systems become so entangled that it becomes difficult to understand one without the other, and, in addition, they tend to constrain each other.

It is, however, the political choices of the major self-interests within the dominant states that are persistently projected into the international domain and these result in their preferred way of restructuring the institutions and structures of the international system, which include the market. This restructuring reflects back into the domestic domain by intensifying competitive pressures on national entrepreneurs, compelling them to utilise their political resources to demand favourable policies in order to manage the changed conditions. This, therefore, emphasises the role political conflict plays in determining transformation as opposed to structure as most theories contend. Structure is shaped by politics whilst, simultaneously, structure constrains and shapes the options that are available to political actors as they pursue their political and economic preferences. Therefore, it is the politics that occur within a particular structure, and not the structure in and of itself, that bring about changes. This is true of the changing structure of international economy as well as the institutional arrangements that mediate it (Underhill, 1994:37–38).

Most analyses, according to Buzan (1991:233), link the anarchic structure of the international system with the capitalist economic structure so that the fragmentation of the political system is a necessary condition for the advent of the capitalist economy, and that it is a natural political expression of its proper functioning. The assertion is that anarchic conditions breed freedom from central political control that hinders the preponderance of the market as a form of social and economic behaviour. Anarchy and market relations create a competitive environment that is mutually enhancing. These structural and institutional arrangements instead constrain or promote and influence the role that political actors can play as they articulate their self-interests. Power is exercised within an environment of interdependence and anarchy in international political economy and this is primarily done through the mechanisms of the market, on the one hand, as well as within a political system that lacks a principal authority, on the other hand. It is within both these environments that states pursue their "sovereign" interests, and specifically of their constituencies, of which the results are "determined by the complex interaction of systemic and domestic structural and process variables" (Underhill, 1994:38).

Buzan (1991:233–234) emphasises the argument that economically international political fragmentation permits market competition by providing economic actors with freedom to move towards more convivial states whose governments are more than welcoming to the power advantages they bring into their countries. However, politically, the pressure from different levels of economic development that international anarchy has to endure, restrains the proliferation of the power-security dilemma. Powers continuously threaten each other as they rise and fall, with the military and economic measures that they adopt to preserve their security being perceived by others to be threatening, and competition for wealth in the market becomes coupled to the competition for strength in the qualities of survival. Both these competition types stimulate technological advancement resulting in the redefinition of the standards of success with regards to economic and strategic demeanour.

Nonetheless, there are two ways in which the secure operation of the global market networks can be threatened. Firstly by external forces that might violate the smooth intercourse of trade, investment and finance; and secondly, by the innate defects of the market itself. The anticipation of external threats makes it possible to counter them, however, internal threats are not forthright, and have nevertheless proliferated rather than abated. The global market has innate tensions and predicaments, which if aggravated, can render it to be viewed by states as a threat to their own well-being. These tensions and dilemmas of the global market define the attitudes of states towards it, whether they support it in their national economies and/or whether they open themselves to it globally (Buzan, 1991:250–251). Nevertheless, such choices are gradually becoming limited for the Third World, whose economies are currently faced with globally imposed structural adjustment programmes that demand an obligatory shift to market democracy.

2.4.2 The International Political Economy of the Third World Security Problematic

Third World behaviour, according to Ayoob (1995:192), is fundamentally determined by the security problematic, both in the domestic and international spheres. The preoccupation with security by policymakers in these states shapes the nature of policies they adopt as they synonymously construe security and status. Bilateral relations between these states and those of the developed world are not only characterised by suzerainty, Jackson (1993:359–360) asseverates, but are also relationships of international clientelism and dependency. Similarly, regional powers, such

as South Africa, India and Brazil, have lesser powers that are in turn dependent on them for their welfare, particularly in Africa, Asia and Latin America respectively. The continuity of these relations is not forecasted to end at any foreseen period, since material inequalities are still striking and profound, and finances and economic resources are so restricted that they will definitely be distributed to areas where political and economic benefits are anticipated the most.

Although the main layers of the Third World security problematic consist of the domestic, regional and global dimensions, the primary dimension is the domestic one, as internal vulnerabilities are specifically responsible for the high rates of conflict within and among these states. These domestic conflicts, according to Ayoob (1995:189), translate into interstate conflicts by creating conditions for neighbouring states to intervene in internal contentions. Despite their similarities, Third World states are extremely varied, and this diversity has a direct impact on the national security problem and hence, in essence, it differs from state to state. The point however, according to Buzan (1991:96–97), is that all states are vulnerable to various types of threats, ranging from military, environmental to economic threats, and a multitude also are infested by political and societal insecurities. The state, therefore, is faced with a multidimensional national security problem, besides the dilemma of military defence, as it is vulnerable to various types of threats. The diversity of the national security problem also relates to the variation of their status as powers.

From the perspective of strong states, the concept of national security is applicable to outside threats and interference, whereas with regard to weak states, the concept fails to identify its referent object, as the idea and institutions of the state are internally (even violently) contested. Buzan (1991:99–101) avers that weak states do not possess a widely pervasive idea of the state or an authority to ensure unity among its subjects in the void of political concord. These states are *de jure* states by virtue of the fact that they are recognised by other states. Viewing security in terms of weak states, therefore, necessitates that contending groups and/or individuals should be made into principal referent objects of security as national objects barely exist. Due to the internal nature of their security problematic as well as its connections to the state making processes, the bulk of these states' security expenditures are not related to the arms transfers from the North, but are predominantly operating costs related to internal control for the maintenance of political stability (Ayoob, 1995:193).

External interference and intervention is in this case difficult to assess as a national security threat, since it will be in favour of each of the contending factions. The dearth of social cohesion and the legitimacy of the state and its regime, according to Ayoob (1995:190–191), provide the bases for domestic insecurity in the Third World. The infancy of the state-building processes as well as the time constraints requiring them to accomplish these processes are the main causes of instability, particularly as virtually all of them are remnants of the discontinuities of colonialism. Colonialism imposed on these states capricious boundaries and forced them together as disparate ethnic entities, moreover dividing these entities into different states, thus confounding their ability to build legitimate and integrated states. This, therefore, places the state at the centre of the security problematic in Third World states since its weakness is the main source of insecurity, and it also emphasises the perceptions of the political élite whose perceptions are essential in the definition and interpretation of the security problem (Ayoob, 1995:191).

The internal dimension of national security, therefore, is of utmost importance as it contradicts the narrow view of states as coherent objects of security. This narrow view, according to Buzan (1991:103–104), can only apply to strong states wherein state and society are intimately connected and, as such, domestic disputes are of minor importance as far as national security issues are concerned. With strong states, national security is basically concerned with protecting the state's independence, political identity and culture from foreign interference instead of political threats that emanate from within its structure. This leads to the question of the justification of internal threats as a national security problem: Are they threats to the state or just threats to the narrow interests of the governing élite? Moreover, if they are recognised as state threats, does this not provide the governing élite with a potent weapon to crush its political rivals? Providing answers to these questions is a dilemma, as governments are an important symbol as well as a principal materialisation of the state, and as such, their inherent frailty questions the integrity and the sovereignty and independence of the state. Then their fate, according to Buzan (1991:105), "has to be regarded as a national security issue".

Another important dimension to consider is that most of the marginal weak states have trusteeship relations with international organisations and leading states, for example, those in the British Commonwealth, the European Union, and the "Francophonie". Most of them are heavily dependent on institutions such as the International Monetary Fund (IMF) and the World Bank for their welfare, which is largely a result of Western colonialism (Jackson, 1993:358–359). Moreover, these feeble

states are defined in the global system by their lack of both political and economic power to influence direction within the most important international trends (Ayoob, 1995:192). The scantly available resources are usually depleted by security concerns and consequently programmes for economic growth and development are dislocated. Furthermore, there is an incessant interference with the proficient utilisation and employment of capital-intensive projects and technology towards military enhancement, since this sector plays an important role in these states' political processes.

Thus, it is unlikely that poverty and underdevelopment can be overcome in the foreseeable future as most of the weak states lack the attraction that foreign investment desires, especially in a period within which private capital is extremely mobile and zealous for areas of greatest and safest returns (Jackson, 1993:360). What complicates the whole picture even more, according to Ayoob (1995:193–194), is that the low levels of technology and the high level of manpower required determine the allocation of security expenditure especially as these states' regimes are focussed at accumulating state power, a characteristic of the early state makers. Three areas require specific attention: the imposition and maintenance of order, the extraction of resources, and the administration and regulation of disputed territories. As these are obviously labour-intensive assignments, they require large numbers of personnel and subsequently increase the ratio of operating costs to other expenditures on security. Similar patterns are prevalent in both civilian and military controlled states, along with the violence that accompanies the state making processes.

Since, the military is central in the processes of state building and promoting security, accordingly, typical of the nineteenth and early twentieth century Europe, its coercive capability is essential during the early phases of the state building process. That is the reason why Ayoob (1995:192–193) argues that the military is always prepared to pursue the state building process on its own by seizing political power if the civilian élite fails to direct its management successfully. Therefore, the difference between strong and weak states may even propel the military institution to seize political power as the only institution that commands national legitimacy and one that has the capacity to do so in order to maintain the structure of the state. Thus, "strong governments (in the sense of being dictatorial and repressive), especially military ones, usually indicate a weak state" (Buzan, 1991:104).

Most policymakers do not acknowledge the fact that the strength of a state does not depend on or correlate with power because weak powers can be strong states while significant powers can be

weak states. There are several determining factors that make some states stronger than others but the majority of the states in the peripheral South are weak states as a result of colonialism. When most of these states were de-colonised, they adopted a European image, which overlooked the cultural and ethnic boundaries and consequently failed to create new nations that could be applicable to them, and as a result, they cannot be referred to as nation-states, but as "state-nations". The type of nationalism that emerged during the anti-colonial struggle "was not the positive unity of a coherent cultural group, but the negative one of common opposition to occupying foreigners. ...The political legacy of most Third World governments was a state without a nation or even worse, a state with many nations. This legacy, plus the existence of societies not well suited to the demands of complex economic and political relations, defines much of the problem of weak states in the Third World" (Buzan, 1991:98).

The demise of the state in the Third World is a consequence of it being a weak entity, its failure to promote development, and as a colonial configuration, it is confronted by many forces that oppose it (Buzan, 1994:98). Weak political institutions and structures of civil society fail to ensure the maintenance of democratic norms of governance as a system of checks and balances towards the security apparatus (Ayoob, 1995:193). Moreover, the possibilities for its demise become more pronounced as the centre adopts an isolationist standpoint. For most of the states in the peripheral Third World, maintaining the state structure has not brought about any possibilities for economic or political development. Its maintenance, on the one hand, has not provided any prospects for the attainment of domestic resources enabling them a practicable position within the current level of international political economy. Allowing its demise, on the other hand, might lead to a violent restructuring that, nonetheless, might not bring any change on the overall situation.

States, in essence, are generally dependent on their conflict-prone nature rather than on whether they are democratic or not (Ayoob, 1995:194). Liberal democratic states can be stable if they are territorially contented, politically and socially cohesive, and relatively affluent in terms of their access to resources and industrial development. This argument is based on the reason that only a marginal part of the population may be alienated from the political and economic organisation of society. Moreover, within a stable democracy, the struggle for the control of government is not a zero-sum game that determines the attainment or deprivation of a livelihood. Stable and strong democracies have a lot to loose with disruptions in the global capitalist economy and the presence of nuclear arsenals prevents them from shaking the steadfast strategic environment.

Nevertheless, democratic forms of government do not insinuate an accomplishment of the state making process for the Third World states, nor do they imply that their vulnerabilities have been overcome to be considered as internally stable (Ayoob, 1995:194–195). Being democratic does not betoken stable nor content democracies, instead they continue to be vulnerable to domestic instability and as such democratisation may be reversed. Moreover, as the primary focus of these states is development, there is actually no strong connection between democracy and development – and if it is there, its occurrence is not because of causality but recapitulation. Cowardly democratisation does not imply "the beginnings of a new dynamic of development" (Laïdi, 1994:32). Development, according to Laïdi (1994:32–33), is rooted "in the combination of the appearance of new management teams (democratic or otherwise), the power relationship between socio-economic operators affected by the reforms, and the existence of institutional and administrative structures capable of guiding change and neutralising opposition".

Cowardly democratisation occurs as a consequence of internal weaknesses within these states, such as lack of cohesion and legitimacy, as they also permit global rivalries to permeate them thus reducing their immunity to external regional and global interference. Weak states also suffer from vulnerability to changes in global norms guaranteeing the recognition of their sovereignty, as their territorial integrity and juridical statehood is dependent on these norms which are bestowed by the international community instead of their regimes being efficacious domestically (Ayoob, 1995:189–190). Socio-political cohesion, therefore, which is the essence qualifying states to be states, varies in terms of the extent to which they may be termed as strong or weak states. "Weak or strong states will refer to the degree of socio-political cohesion; weak or strong powers will refer to the traditional distinction among states in respect of their military and economic capability in relation to each other" (Buzan, 1991:97). Thus, the main distinguishing feature of the weak states, according to Buzan (1991:99), is the high level of threat to the security of the government that is domestically generated, and that implies a failure to create a domestic political and societal concord enabling them to eliminate the large-scale utilisation of force in the day-to-day national political interaction. However, it becomes difficult to scientifically apply the variable of socio-political cohesion as it lacks a quantifiable measure, and as such, there is no indicator that can define the difference between strong and weak states.

Central, therefore, to the provision of a deep comparative analysis and less ephemeral presumptions within the study of security in the Third World, Ayoob (1995:194) contends, is the understanding of the state making processes and the variables of state and regime security, independent of the development and dependency analyses that have dominated the study in the past. Most significantly, is that the protracted and segmented process of state building is usually telescoped into one phase by pressures of time and international competition (Ayoob, 1995:193). As they are attempting to build themselves into "state-nations", at the early stages of this endeavour, states of the South are infested by domestic violence as a tractable passage to central power. These states find themselves trapped by patterns of history that imposed upon them economic underdevelopment and political penetration, and as a result are unable to marshal political and economic resources that are required to build strong states. Buzan believes that "if these new states follow the consolidation model of the European states, then state-building is likely to generate plenty of violence both internally and externally" (1991:99).

Accordingly, Buzan (1991:106) believes that the establishment of strong states creates the foundation for the facilitation of national and individual security, albeit it is not invariably its warranty. However, the intrinsic presence of weak states within the anarchic structure of the international system does not ensure its stability. At the same time, the establishment of strong states is not necessarily a sufficient condition for a potent global security since their existence is not a guarantee of peace.

2.5 CONCLUSIONS

The end of the Cold War did not develop into the elimination of the threats of conflict and war but instead it brought about the dispersion of these threats to promote conflict between the forces of integration and those of fragmentation (Zuze, 1994:41). This is the situation globally. The demise of the Soviet Union as a major global power led to its fragmentation and the emergence of new states. It was the same with Yugoslavia, Czechoslovakia and it may be the case with Canada and the United Kingdom or Spain for that matter. Forces for secession are emerging in all regions and countries globally and others are still to emerge. It may be the same case with most of the Third World states as a result of the defects of boundaries delineated by colonialism. On the other hand, other states are reuniting, for example Germany, and others are still to reunite, possibly Korea and the two Congos.

The world consists of a multitude of states that are weak due to extreme disorganisation and internal divisions. These states are the former colonies of the Western powers that belong to the current Third World and those that emerged from the disintegration of the former Soviet Union and the Yugoslav federation. The emergence of new states, on the one hand, means that international boundaries have to be changed and probabilities of new states emerging in other regions will happen in varying fashions and therefore difficult to predict. The UN Charter, on the other hand, promotes the doctrine of non-intervention in the territory of a sovereign government and the proclivity of most major powers is against intervention. As a consequence, possibilities are that if force is no longer going to be the driving element behind the redrawing of boundaries, then boundaries are not going to change at all. If they are going to change, then they have to follow the consent given by the parties involved, such as what happened in the former Soviet Union.

Most marginal Third World states may be pressurised by the International Monetary Fund and the World Bank to unite into more economically viable entities under the auspices of market democracy, albeit that it does not seem politically probable. Besides, most governments will be reluctant to give up territory or to combine their jurisdictions with other states voluntarily, rather the existing state system has acquired a sanctity that most major powers are unwilling to violate or dispute. The main reason is that interference with international boundaries might result in international condemnation as well as disruptions to global order that would be provoked by such action.

A fundamental prerequisite for the betterment of global security is the reinvigoration of the world economy through the elimination of the Third World debt crisis and ensuring the full participation of these states in the international political and economic institutional frameworks. Without this input, sustained defence is unrealisable, parochialism will be intensified, and the ability of society to defend its well-deserved democratic, economic, and social values, of which the pursuit of security is aimed at, will be subdued. Moreover, the UN has to seriously consider a new agenda that will focus on the integration of regional security arrangements in the rest of the Third World into its Security Council, either on the basis of the obviously flawed Westphalian configuration or restructuring itself to become a forum for regional security communities. This agenda has to embark on policies that specifically address the local, economic, political and social foundations of conflicts as well as the necessary confidence-building measures that will advance the establishment of self-help security

regimes on a long-term basis. Accordingly, the arms production and transfer system will depend on these developments, as arms transfers are essentially an international politico-strategic and economic phenomenon that relies on changes in the global security environment.

It is highly possible that the trend of continuing intra-state and subsequent regional conflicts will increase the demand for conventional weapons, particularly in East and Central Europe, the former Soviet states, and in most parts of the developing Third World. The regeneration of nationalism, ethnic, racial and religious friction and the exposure of weak states that emerged with the negation of the Cold War, mainly motivate these conflicts. As was indicated in the first chapter, emerging arms suppliers are the ones that might benefit from this demand as they produce weapons that are actually apt for the current conflict conditions. As a result, the system will be characterised by a smaller global military-industrial complex encouraging the sharing of technology between the various tiers of suppliers, and this is reinforced by the fact that defence budgets are being reduced in most states. Therefore, the move towards regionalisation of the arms trade as a consequence of the internationalisation of the defence industries is a great possibility, and the increasing commercialisation of the arms trade could precipitate the inclination towards regionalised arms production. Nonetheless, these aspects of arms transfers will be deliberated upon in the following chapters. Arms production and transfers are therefore the focus of the next chapter, with a specific emphasis on the dynamic significance of technology.

CHAPTER 3 – THE ARMS PRODUCTION AND TRANSFER SYSTEM AND THE DYNAMIC SIGNIFICANCE OF TECHNOLOGY

3.1 INTRODUCTION

An arms industry is not solely established for political reasons, but there are economic motivations as well. These include the intention to save the cost of importing armaments from other suppliers, and by exporting arms the balance of payments is enhanced. Other economic interests that are generated with the establishment of an arms industry are employment and the intention to maintain capabilities in the field of advanced technology, and consequently, these interests tend to become a strong motivation for arms exportation. However, these are not the only economic motivations for arms exportation. The main motive is the non-existence of a large domestic requirement for armaments, which tends to affect the ability to achieve economies of scale through domestic production.

Exports therefore help to lengthen production runs for states that face such a problem by amortising investment in advanced technology products that require high costs of research and development. That is the reason why states are struggling voraciously for arms markets and Western European states resort to multinational production projects. The intention to achieve economies of scale is driven by the process of qualitative advance, which requires that sophisticated weapon systems have to be continuously developed and the latest generations have a larger unit cost than the previous ones. "Both this cost, which tends to outrun the general rate of inflation, and the fact that the newer weapons are more capable than the older ones they replace, create pressure to acquire smaller numbers. Shrinking domestic demand in terms of numbers of weapons in turn raises the incentives to lengthen production runs by finding export markets" (Buzan, 1987:40–41).

The aim of this chapter is to explain the trends and the dynamics of the arms production and transfer system, with the main aim of making the international arms market more comprehensible. The first issues to be addressed are the definitions of the concepts of arms transfers and a brief focus on the problems of measurement, particularly the aspects of reliability and validity, as well as the qualitative and quantitative dimensions of arms transfers. Secondly, focus will be on the inherent attributes of the international arms production and transfer system, most specifically the activities of

the various actors and the constraints and opportunities provided by the international arms markets, along with the role played by technology in transforming the system. Finally, the dynamic significance of technology will be looked into, which includes the military technological revolution, the diffusion of military technology, and concluding with the concept of the arms dynamic.

3.2 DEFINITIONS AND PROBLEMS OF MEASUREMENT

3.2.1 Defining Arms Transfers

There exists no clear agreement about the meaning of arms or arms transfers, according to Catrina (1994:191), except that they consist of "lethal weapons being produced in one country and subsequently sold and physically transferred to another country". There are three main problems regarding the definition. In the first instance there are the genuine ambiguities in the consideration of the term "arms", which are theoretically premised. Secondly there is the reinforcement of the definition of arms, and subsequently "arms transfers", as these have a political purpose. "In this context, decisions by governmental agencies or individual researchers about what to include and what to exclude may be based loosely on theoretical grounds and ambiguities exploited to present the position of one particular state or group of states in as favourable a light as possible" (Catrina, 1988:7–8). Lastly, a clear conception of arms transfers may exist in principle, but this could, for the sake of brevity, be connected to military or military use, which complicates the problem because one will be compelled to substitute the definition of "arms" with that of the term "military" (Catrina, 1988:8–9). The terms *weapons/arms*, *defence*, and *military* are usually used interchangeably, particularly with regard to combinations such as *arms technology*, *arms production*, *arms industries*, and *arms trade*, without actually suggesting any emphasis, although they may in certain contexts be imparting different meanings. However, these terms *weapons/arms*, *defence*, or *military* are not synonyms, and they should not commonly be used interchangeably (Catrina, 1988:9).

There is also an inherent problem in terms of how *arms* can be defined. Usually reference is made to the concept of lethality, which, however, is inadequate in its distinction, considering the fact that any instrument can be lethal if it is misused. What makes the concept of arms more obfuscating is the inclusion of logistic support, training, services, components, and spare parts as part of the arms package. In general, these aspects do not pose that much of a threat to the recipients' potential or real enemies when compared to the provision of actual combat equipment. Wilcox (1979:28–29)

argues that it is relatively easy to identify articles that have been designed or modified to meet military needs, along with the related technical data and training, with problems, however, being encountered with dual-use equipment, services, and technology.

A general feeling of agreement can be achieved in terms of defining what constitutes actual combat equipment. These, substantially "are the weapons and munitions that are inherently more likely to aggravate a crisis by their arrival or, conversely, to increase stability by clearly signalling a determination to make any encroachment expensive" (Wilcox, 1979:30–31). However, the political impact brought about by the transfer will vary according to the type and sophistication of such equipment, and whether it will improve the combat capability of the recipient's armed forces or not. For Lewis (1979:184), the concept of arms includes "military equipment, usually referred to as 'conventional', comprising weapons of war, parts, ammunition, support equipment, and other commodities considered primarily military in nature – tactical guided missiles, military aircraft, armoured and unarmed military vehicles, tanks, infantry small arms, and the like". Frank (1969:10–11) concurs with Lewis when he defines arms as articles of defence that include all armaments, "weapons system, munition, aircraft, vessel, boat, or other implement of war". Furthermore they include "defence property, installations, facilities, and machinery relating to its (war) supply" that "are considered 'defence articles'". However, Frank (1969:11) maintains that the latter are usually excluded from the agenda of arms transfers.

Catrina (1994:191–192) reiterates that the whole description becomes intricate when (1) the equipment transferred is intended for military forces but is inherently non-lethal or when dual-use equipment or goods (that can be used by both the military and civilians e.g. transportation or communication equipment, fuel, foodstuffs or medical supplies) are being supplied; (2) instead of complete weapon systems being supplied, technology and component transfers or licence-production occurs; (3) two or more countries jointly fund for research, development or production for military purposes; (4) change of control and ownership occurs within the borders of the host country in situations of forward-stationed forces; and (5) transfers occur from one country to another without the change of control and ownership in situations of forward-stationed forces. It is therefore prevalent within the research community that definitions have been applied differently by even the leading research institutions and agencies on arms transfers. This is mainly due to the fact that "the political and economic implications of different modes of transfers – for example, sales on commercial terms or military assistance, and straight transfers or transfer of technology – can be quite different" (Catrina, 1994:192).

Another general problem is the usage of the concept *arms trade* interchangeably with the concept of *arms transfers*. The problem here is that those arms that are supplied as grant assistance would be automatically precluded from the system, and hence the term *arms trade* is not exactly adequate to be strictly applicable to the definition of *arms transfers*, although most analysts use both congruously (Catrina, 1988:10–11). Moreover, boundaries of the field of arms trade or arms transfers are difficult to demarcate since the field of the "transfer of completed weaponry is only the core of a larger area of concern which might be defined, more broadly, as the diffusion of military technology, or military assistance. The latter term, as well as that of military aid, is normally used to describe weapons giveaways as distinct from cash sales" (Harkavy, 1975:14). In reality, these concepts seem to spill over into one another such that their delineation is often obscured. This is due to the fact that these concepts are ambiguous and are applied differently by analysts.

According to Frank (1969:3–5), when the "arms trade" is broadly defined, it "is a by-product of the complex military, economic, and political forces that determine the creation, maintenance, and use of armed forces – regular or irregular. More narrowly, it is the conduits or channels through which pressures are transmitted between nations in terms of the arms and weaponry required to accomplish national, or even private, objectives. The 'arms trade' can exist between groups with no national connection or between supergroups of nations including regional and international bodies." Included in the arms trade are primary transfers of new weapon systems from arms producing states to allied or friendly states; secondary transfers of second-line weapon systems; and "the capricious and extensive private arms market throughout the world" (Frank, 1969:5). The private arms market includes the black and grey markets, as well as the private entrepreneurs that operate outside the jurisdiction of their governments.

Laurance (1992:19–20) identifies several aspects of the arms trade that are usually less considered or even overlooked as being substantial elements of an arms transfer relationship. These include logistics and support services, training and technical assistance, the mode of payment, the mode of production, military utility, and the delivery stage. These dimensions can be used variably, depending on how the question is reviewed. Defining arms transfers more broadly will include the transfer of military skills, in terms of training, mercenaries, seconded personnel, and advisors. With the arms trade becoming complemented by military assistance, or the latter being conveyed along

the patterns of the former, it accordingly reflects the diplomatic essence of arms transfers in which case arms transfers become increasingly used as instruments of diplomacy (Harkavy, 1975:14).

In general, security assistance or military aid is more comprehensive than general arms transfers as it also includes ordinary military training that is not tied to any arms transaction. Supplier states providing security assistance pursue it for the purposes of strengthening their allies in need and also for their own benefit through achieving economies of scale, smoothing their production line, expanding their defence mobilisation base, and being able to test the capability of their newly-produced weapon systems where possibilities exist for them to be utilised. However, the major purpose of military aid for most leading supplier states is the stimulation of demand from the recipient states (Catrina, 1988:30–31). Moreover, the consideration of other aspects of arms transfers such as components, ancillary equipment (which among other things include radar and communications devices), as well as spare parts, would legitimately cover almost the whole field (Harkavy, 1975:14; Pearson, 1994:7). These aspects are integral constituents of modern warfare and therefore essential factors of the arms production and transfers system.

Therefore, arms transfers is not only a concept referring to international arms sales, but it also connotes arms that are conveyed for political reasons, as well as the global functioning of the arms industry. Buzan (1987:51–52) maintains that without arms transfers, there will be tremendous dissimilarities among the various states in military terms, if they were to be compared according to their capabilities to produce arms. The gap between the various states is narrowed by arms transfers although they attract a lot of controversy as a result of the commercial interests involved in the sale of "large-scale means of destruction" (Buzan, 1987:52). This is the reason why arms transfers have been brought under government control or supervision to avert foreign policy altercations emerging as a result of unscrupulous commercial transactions. However, this is not the only reason for greater government involvement in arms transfers.

Governments became the major buyers of armaments, which, according to Buzan (1987:52–53), was accompanied by the concentration of arms production within a lesser number of large companies. Thus, governments and the arms industry became partners – in some instances the arms industry even became nationalised. The states' inheritance of arms transfers led to them adopting all the pressures that are associated with the practice by channelling arms through the political processes of determining national interests instead of them being unscrupulously sold by private

commercial interests. This situation, according to Catrina (1988:11), created a frantic mixture of political and economic interests, which is sometimes blamed for the arms races that are reputed to be fuelled by political competition among supplier states. Furthermore, most governments, as a rule, preferred to conduct their arms transfers entirely clandestinely or to subject them to a great degree of secrecy, particularly when they felt that their exposé could jeopardise their valued political or diplomatic relations.

In essence, arms transfers pertain to "the acquisition and maintenance of national security by nation-states" and specifically they denote "observable commodities that are traded in the international system for the purpose of enhancing the military capability or political power of the recipient nation" (Laurance, 1992:3). The intention therefore is to meet the strategic objectives of states and collectives in order to satisfy certain political, military, economic and/or diplomatic ambitions within the domestic domain and the international system. Thus, for both the suppliers and the recipients, arms are transferred in the search for power, the quest for victory in war, as well as the pursuit of economic wealth (Krause, 1992:97–98).

3.2.2 Problems of Measurement

3.2.2.1 Reliability and Validity of Arms Transfer Data

One major problem with regards to data on arms transfers, is its reliability, validity, and accuracy, with sampling techniques being affected by cuts in data collection and statistical experts being compelled to use deficient data on research that tended to reflect the broad changes occurring in international economics. Usually in the post-Second World War era, data collection methods focused on state-to-state transactions that involved major weapon systems allowing for global trends to be discerned, particularly by the leading intelligence services, regardless of the level of secrecy and sensitivity involved. The disintegration of the bipolar system insinuated the deterioration of the arms monitoring system, and the enumeration or evaluation of transfers depended on the dynamics of the system and individual state policy-making processes. As a consequence, the dynamics and trends of the international security system could be determined from the production and exportation of sophisticated weapon systems (Laurance, 1992:21).

The first problem regarding reliability pertains to the rules of enumerating data, as there is no standardised format globally and as governments use their own definitions of weapons in numerous ways. Therefore, when the data is compared, the results are unreliable. Moreover, the secrecy habit surrounding the arms transfer data compounds this problem, wherein, as a consequence of bureaucratic politics, information is withheld or distorted. The generic denominator contributing to the unreliability of data are the political connotations attached to arms transfers as they relate to the dimensions of national security and the processes of foreign policy, an innate part of the rational state actor model, which is notoriously deceitful and reputedly manipulative of data to suit its own orchestrations. The problem of reliability is further complicated by the fact that analysts do not have access to the same data sources resulting in serious confusion of analyses. This is due to contradictions within and among sources regarding the dates and quantities of delivery; the lack of data on the weapons specifications, their models, capabilities, and exact cost; and finally, the problem of identifying the specific parties involved in a contract (Laurance, 1992:34–36). The ability to overcome these shortcomings will depend on the analysts' intellectual willingness to attain such exactitude.

Validity is compromised by the various dimensions of the concept of arms transfers, especially with regard to monitoring the flow of military capability without considering dual-use equipment, for example, when the economic consequences are calculated according to contractual data in lieu of the actual outlays paid by the recipient. In order to subdue this problem, a valid and standardised definition of the term arms is a prerequisite. Most analysts tend to rely on defence expenditure data in order to mirror military capability as a consequence of the belief that the sophistication of a weapon system is commensurate to its cost. However, within the domain of arms transfers, with the convoluted intercourse of military aid and grants, barter arrangements, ideological or political gifts, counter-trade and offsets, among others, this form of measurement becomes incomprehensible. Moreover, as states can manipulate the data, as defence expenditures fall short of distinguishing between personnel and equipment outlays, and as there are intricacies of inflation and currency aberrations, the problem becomes more abstruse. Therefore, "costs as an indicator of military capability can lead to misleading conclusions..." (Laurance, 1992:36–38).

Catrina (1988:18) suggests what he believes to be a much more appropriate approach, which is to view arms transfers according to their quantitative dimension. This approach, according to Catrina (1988:18–19), can be expressed in two different ways, to wit, by the number of weapon systems

transferred or the monetary value of the shipment. The number of weapon systems transferred is usually more tangible and comprehensible than the monetary value, which is subject to analytic misconstruction and varying technical calamities. Numbers practically provide a more concrete gauge of military capabilities transferred, although they are predisposed to ignore the sophistication of each and every weapon system, which has a direct bearing on their military utility and cost. This problem, however, can be eliminated with a large number of refined categories of weapon systems, taking into consideration their capabilities and costs *vis-à-vis* other closely related categories in the same genus or class. The direct opposite of this exercise will be to eliminate all the categories and treat all weapons as one category thus producing a global figure that reflects the number of weapons transferred, treating all systems as equal.

Nevertheless, Laurance (1992:38) believes that another approach is required in order to overcome Catrina's problem, such as for instance the use of various indices in order to measure the military capability of the arms transferred. If one considers the simple process of counting major weapon systems, the correlation of inventories with capability will not be exact since the standards of qualitative sophistication of a weapon system and the levels of training to apply that piece of equipment differs vastly from a case-to-case basis. Thus, other contextual variables such as terrain, operator proficiency, logistics, and the opponent's capabilities and proficiencies can not be overlooked. Furthermore, other aspects in the inventories tend to be equivocal to policymakers such that they are interested in the actual capabilities of a weapon system, to wit, its prestigious nature, its ability to be destabilising, and most especially its technological dimension.

3.2.2.2 Measurement Using Cost Data

The most prominent problem of measurement is the nature of the data that is used to compare, more generally the quality of the equipment transferred and more specifically the cost data of the equipment, complicated by the exchange rate fluctuations and the tangible buying power. Making the picture more complex is the tendency of not selling equipment based on market prices as a result of political or other reasons such as barter agreements or loan arrangements at lower interests rates. Therefore, cost data, according to Harkavy (1975:20–21), is not a reliable or valid measure of arms transfers, unless this data is related to a specific weapon system, regardless of origin and sophistication, and assumptions be made of the general cost of an ordinary system and other factors to be controlled for its estimation.

Harkavy (1975:20–21) argues that the shortfall with this method is that there are difficulties in relating the costs of a weapon system to its actual value, due to its origin, sophistication and accessories and this may have negative consequences on the assessment of inventory trends and therefore their analyses. Wilcox (1979:32–33) also agrees that usually when arms transfers are measured in terms of monetary value, this method becomes inadequate when compared to military capability. Monetary value measures the amount of resources consumed on armaments, that, nevertheless, could include outlays on related beneficial social projects, such as those arising from contractual offset arrangements. The problem with monetary value is that it is far from being able to measure the equipment's potential for destabilisation except in extremely exceptional cases. Therefore, analyses based on monetary value have to discriminate between commitments and deliveries, as proposed commitments provide an apt monetary measure of gravity reflecting the specific obligations that the state is considering to pursue.

On the other hand, arms delivered can be misleading in terms of monetary value *vis-à-vis* their politico-strategic impact. Arms deliveries provide a better measure of the flow of arms transfers as opposed to the actual value, in economic terms, of the arms transferred (Wilcox, 1979:33). For Catrina (1988:19), the utilisation of a monetary value of arms transferred incorporates a number of intrinsic problems. At first there is the problem of having to convert currencies to or from the dollar value for comparison across states and for correlation over time by eliminating the efficacy of inflation. The amplification of the costs in weapon systems has been reflected in the increase in their sophistication, regardless of the inflation specific to military goods, which is estimated to rise faster than the general inflation index. The problem deepens as it is difficult to distinguish between the price rise that occurs as a result of advancement in the sophistication of a weapon system, the one that is a result of normal inflation, and the one that occurs as a result of military goods-specific inflation (the difference between inflation that is extant in the general economy or the inflation that is related specifically to military goods).

Sophistication or military capability is much more abstract to elucidate, as it "should ideally reflect only numbers and combat power, that is, it would be desirable to deflate current-dollar series by a defense-specific deflation index (which is not available)" (Catrina, 1988:19–20). Another problem is the one of the details of the transaction itself, as both the suppliers and recipients are often reluctant to reveal the nitty-gritty of their deals. Moreover, even if the details may be unveiled, they

become more complex as offsets become involved. Furthermore, if a global view is to be adopted, it means that a ponderous exercise should be anticipated. Therefore the usual arms transfer data are not an appropriate indicator for the economic costs or the benefits to the recipients or the suppliers respectively.

3.2.2.3 The Problem of Small Arms Proliferation

Regularly, according to Harkavy (1975:19), the generally neglected terrain of small arms tends to distort the whole picture of the arms production and transfer system. This trend is usually influenced by the fact that small arms are difficult to measure, whereas most of the wars that are characteristic of the contemporary period are local or regional in nature, revolutionary or civil wars, and as such are fundamentally waged with small arms. There are very few instances where local wars, in particular, are conducted with major weapon systems. Nevertheless, major weapon systems are transferred on a government-to-government basis, whilst small arms are usually conveyed through private or semi-private dealers.

This becomes more complex when the dealers' approach is based on a seamless web of multinational subsidiaries with operations that are extensively clandestine in disposition. Virtually all the agencies monitoring arms transfers, Harkavy (1975:19–20) alleges, are distressed by this area of the arms production and transfer system, primarily because it is the major area of interest for governments and international organisations focussed on reducing or eliminating the possibilities of conflict in the international system. Nevertheless, within this discourse, small arms are considered to be a significant part of the arms production and transfer system, indeed a substantial category besides other categories of major weapon systems, such as aircraft, helicopters, tanks, combat vehicles, artillery systems, naval vessels, missile systems, and their components, sub-systems, and spare parts.

Considering all the definitional and measurement factors mentioned above, the researcher, therefore, will adopt the posture that the arms trade is not only a concept referring to international arms sales, but it also connotes that arms transfers are conducted for political reasons, including the global functioning of the arms industry. Therefore, in this discourse, arms transfers will be specifically viewed in their political dimension, to wit, according to the policies of the supplier states, so as to forestall the unnecessary controversies. This, however, does not insinuate that the reactions or the

responses of the recipients are insignificant in their political dimension. Instead they are perceived to be central to viewing arms transfers as a political phenomenon. Nevertheless, the intention of this study is to view arms transfers from a supplier perspective, and accordingly, whenever a compulsion is identified to address the dimensions of measurement or the definitional polemics, that requirement will be clearly specified and elucidated.

3.3 THE INHERENT ATTRIBUTES OF THE INTERNATIONAL ARMS PRODUCTION AND TRANSFER SYSTEM

3.3.1 The Motive Forces of the Arms Production and Transfer System

War or the battlefield is where military technological capabilities are validated, and in their pursuit of victory in war, states, according to Krause (1992:16–17), are allured to be involved in arms transfers, production and innovation. The immediate consequence of a war is a fleeting desperate requirement for more armaments that nonetheless, does not alter the structure of the arms production and transfer system. However, a protracted conflict, characterised by persisting battles, generates a demand for the transfer of technology for indigenous production that has a long-term effect on the arms production and transfer system. Hitherto, the demands of war also compelled states to strengthen central organisation and to impose taxes on their citizens for the primary objective of being able to mobilise for war. This became reflected in the international hierarchy of the arms production and transfer system and thus changes within this system were also shaped by the objectives of the pursuit of victory in war.

If it was possible, Krause (1992:16) believes that all states in the anarchic international system will be producers of armaments. However, the uneven distribution of capabilities and resource endowments ensures differences in the abilities of states to produce arms, and therefore arms transfers become the logical answer to the requirement for modern armaments. Arms transfers, therefore, are a consequence of an inability by states to produce arms, which is intrinsically a desire driven by the anarchic nature of the international system. This aspect makes armaments to be a unique commodity, as their production and transfers patterns are determined by comparative advantage, and thus, changes in the arms transfers structure reflect changes in the entire international system. The successes of the arms industry are not only dependent on a certain level of industrial development, but, Krause (1992:13–14) contends that they can, on the one hand,

become facilitators for rapid industrialisation through the backward and forward connections with other sectors of the economy, thus stimulating economic development. On the other hand, the arms industry can have a negative effect on economic development and growth, as it depends solely on factor endowments, as well as the existence of constraints on the diffusion of global arms production. Neither of the two extremes are absolutely prevalent in reality, they, however, dynamically interact in an intricate manner.

The state and governments are responsible for the contemporary arms trade rather than the private manufacturers, as the former have a vested interest in the sanctioning of exports. Secondly, governments are responsible for the creation of a viable environment within which the lasting production of advanced technology for armaments is sustained. Most importantly, governments are totally convinced that the possession and export of armaments is inextricably linked to the concerns about national sovereignty and policy making. This relationship between governments and their contributions to arms transfers are solidified within the context of the contemporary arms production and transfer system as it transcends the sheer confines of bureaucratic control (Stanley and Pearton, 1972:5). In virtually all arms manufacturing states, the government is both the "sanctioner", the licensing authority, and the salesman of arms. This was much more pronounced in the socialist countries as state establishments were arms manufacturers and therefore had to sell the arms they produced themselves. According to Stanley and Pearton (1972:85), governments became the commercial exporters of armaments and their officials had to adopt the mantle and the mentality of the salesman.

An arms producing and exporting state's knowledge of the requirements of a prospective buyer, Stanley and Pearton (1972:105–106) maintain, is of vital importance in securing a lucrative deal. This role is primarily played by military attachés or advisors sent as emissaries to the prospective recipient state wherein they suggest various combinations of equipment that can be purchased in order to satisfy that state's defence requirements. These package deals are often designed to meet the prospective purchaser's specific requirements and are often beneficial to the supplier as they connote and entail the purchase of a larger consignment rather than a single weapon system. Usually these package deals include the training of technical and operational staff, the provision of the necessary infrastructure and the after-sale services depending on the terms of the contract.

In other arms producing and exporting states, particularly where the manufacturers are partly-state or privately owned, the government often provides financial assistance in terms of credit and trade protection to the arms manufacturers in order to bolster their exports *vis-à-vis* their competitors. Credit terms are essential to the prospective buyers' preference of a conducive arms deal (Stanley and Pearton, 1972:110–111). In most instances, the supplier-recipient relationships somewhat tend to reflect the patterns and dynamics of political and military conflict as well as those of economic and technological competition existing in the international anarchic system of sovereign states. However, it is not only the international domain that influences the generation of a "military-industrial-administrative-technoscientific infrastructure", which symbolises a sophisticated arms industry, but the internal factors are cogent as well (Kolodziej, 1979:17–18). These include an amalgamation of bureaucratic structures that compose the complex domestic organisational setting within which arms production and transfers take place, and are potentially querulous factors within the states' policy-making processes regarding state security and economic-related decisions.

Governments are obliged to respond to these overtures of bureaucratic structures because they represent convincing political, strategic, security, economic and technological interests and ambitions. Therefore, their influence is preponderant in the determination of the states' arms production and transfer policies (Kolodziej, 1979:18). The interests of bureaucratic or governmental agencies are reflected in every state's arms programmes, albeit they cannot hinder the assiduous progress of science, particularly if research is constantly funded. Scientific and technological innovation, according to Pearson (1994:42–44), usually outpaces the political and military interests that try to control its progress, especially with the creation of overkill capabilities, such as nuclear weapons. Hence, appropriate political control fails to contain its evolution and proliferation. In most instances, new technology originates among civilian scientists and is converted into military capabilities by governmental agencies and funding, particularly those with a military proficiency, which provide them with engineering faculties, political organisation and influence. The military faculties become responsible in terms of determining the type of weapons to be procured as well as their adaptation into battlefield conditions. Furthermore, retired military officials are usually recruited into the arms industry through the "revolving door" to provide their expertise in practical adaptation of the latest weapon systems that are being researched and developed (Pearson, 1994:44).

Political and military officials ensure that the process of production, deployment and transfer of weapons is rigorously controlled, as they can be potential threats to each state's stability if they may happen to fall into wrong hands (Pearson, 1994:44). However, several interests at the "subnational" bureaucratic level reflect both private and collective interests, which Kolodziej (1979:18–19) describes as being narrow, more particular and personal in nature and, as such, are often in conflict with the general objectives of the state. When firstly viewed from the perspective of military security, their demands are much more confined than those of general defence that are grounded on the considerations of broader aspects of political and economic cohesion and therefore long-term in orientation. Within, these actors are those that represent the interests of business enterprises that are focused on magnifying profits, controlling markets, maintaining guaranteed access to credit facilities, government contracts and subsidies. Then there are the interests of those actors that are focussed on the expansion of scientific and technological breakthroughs that in turn are spin-offs to and from weapons production. Such interests might be emphasised regardless of the impact they might have on weapons designs, military costs and global security. Therefore, harmonising these disparate interests on the basis of operational national policy is an arduous exercise, as these are, according to Kolodziej (1979:19), conflicting, overlapping and interdependent and ultimately are a reflection of "the domestic struggle for power, wealth, and privilege".

3.3.2 The Characteristics of the Arms Market

3.3.2.1 Supplier Markets and the Behaviour of Suppliers

Arms exports are usually promoted by the rapid growth in the complexity and scale of technology and manufacturing, and the related costs of production (Stanley and Pearton, 1972:137–139). Arms manufacturing states are therefore compelled to increase their market share, and in some instances become desperate for them, particularly as a result of the increasing demands arms production has on capital. To be able to produce advanced armaments, a high rate of fundamental knowledge and the ability to exploit sophisticated technologies is required. Moreover, vast scales of resources are required, combined with the knowledge of the future of defence requirements, for which the weapons are being developed. To forecast the future type of war, the nature of the political situation and the operational constraints within which the weapon system will be employed becomes essential to the designers and planners of the project. The perplexity of the undertaking is that these predictions are not based on substantial evidence, therefore preferences have to be based on

assumptions that are vulnerable to changes in the conditions they are trying to address. Nevertheless, even when the conditions to be addressed can be substantiated, these uncertainties still prevail, as the costs and the cost-effectiveness of a weapon system can never be entirely ascertained.

Qualitative changes in arms transferred have been more or less in congruence with their quantitative diffusion. Heretofore, states transferred arms that were superfluous and technologically antiquated within their inventories to the recipient states and groups in order to accommodate top-of-the-range systems. However, according to Pierre (1982:10–11), contemporary recipients demand the most sophisticated and advanced weapon systems, whereby foreign orders are given top priority over domestic requirements, or foreign demands initiate the introduction of a new system that ultimately furnishes the supplier state's own armed forces. The type of weapon systems dictates the number of extant suppliers as well as the breakdown of market shares, to wit, that a smaller number of suppliers will be capable of producing technologically sophisticated and costly weapon systems and vice versa. The market shares are therefore expected to be concentrated amongst a few suppliers when sophisticated equipment such as fighter aircraft, intercontinental ballistic missiles and nuclear-powered systems are considered (Harkavy, 1975:5–6). Nevertheless, the number of producers and suppliers of weapon systems is dictated by the structure of the global system that also includes the endowment of resources plus technological factors.

It is not always the case that a state's capability to produce arms denotes a commensurate position in the supplier market, as this is controlled by larger players who buttress their status by providing offset arrangements, spare parts, maintenance and military training services. For that state to be able to maintain its arms production capability, it is compelled to penetrate the arms export market, so as to be able to regain research and development costs and production investments that can only be salvaged by achieving economies of scale through exports. Without an export market, economies of scale can never be achieved unless a huge domestic or co-production market is guaranteed. Within the international hierarchy of sovereign states, an independent arms production capability is an attribute and collateral of great power status that is supplemented by an unconstrained diplomatic posture, and as a result, states pursue it regardless of economic ramifications. "In short", Harkavy (1975:50) avers, "prestige and economic factors are intertwined in determining which nations will choose to become producers, and hence usually suppliers".

According to Krause (1992:88), one of the ways to discern where a supplier state belongs in the various tiers of arms production and transfers is to assess its shares of military research and development spending. At certain intervals some states fall out as producers and suppliers of weapons, while others penetrate the system reacting to a variety of political, economic or technological stimuli. Their position becomes located in a continuum of the relative degree of independence in research and development as well as production. Most of the new entrants start from copying or from license-producing existing systems, or from importing components and parts that could be assembled domestically (Harkavy, 1975:51–52). The nature of the arms market has not been restrictive in terms of which arms are able to penetrate it, whether copied, license-produced or assembled, unless if the original supplier imposes end-use restrictions on the equipment. Therefore, the capacity for independent research, development and production of comprehensive systems is not a prerequisite for attaining the status of being a producer and supplier of armaments.

Actually, and most importantly, this capacity becomes an essential criterion for the determination of a supplier state's position within the hierarchy of the arms production and transfer system. It is, however, difficult to obtain information on military research and development spending, as most states are reluctant to divulge such information. Alternatively, Krause (1992:89–91) believes, one can estimate the value and distribution of global arms production in two presumptuous ways. Firstly, by making estimates from military spending, through generally assuming military procurement to be around 25–30% of global military spending. Secondly, by estimating that approximately one-fifth or one-sixth of total arms production constitutes interstate arms transfers. These figures do not reflect accurate production and procurement shares of the producers, but they do provide a criterion from the basis of which a closer statistical value can be discerned.

The first arms sub-market that is found amongst the industrialised states is one where the most sophisticated weapon systems are transferred and where very few restrictions to trade exist. Nevertheless, according to Catrina (1988:42–43), a reluctance to share technological knowledge is prevalent because of fear of competition and national security considerations. Straight transfers are no longer the norm in this sub-market as most states demand economic-industrial offset arrangements that are motivated by political interests of maintaining a strong indigenous defence industrial base and firm-centric parochial economic considerations. The second sub-market is the one between industrialised and developing states that is characterised by widely varying

technological sophistication. Straight transfers are also constituted by top-of-the-range sophisticated systems, and offset arrangements also comprise arms contracts agreements.

The major difference between the first and the second sub-markets is that technological transfer arrangements are still beyond the technical capabilities and the economic viability of most developing states. Therefore such arrangements are only limited to those states that have the financial means to procure both the technological know-how and the appropriate production facilities (Catrina 1988:43). For example, the emergence of major regional powers such as Brazil, Israel, South Africa, and India, according to Pierre (1982:4), can be attributed to the contribution made by the diffusion of military technology, and conventional arms transfers are one component of this diffusion of military power. This distribution of power in certain instances has an important impact that is equal to or greater than other economic forms of the distribution of power, particularly because the denial or the granting of arms absolutely ignites a political and/or psychological response. Moreover, it is a form of transfer of technology as most states are no longer interested in commercial off-the-shelf purchases, but require the technology to license-manufacture or co-produce the weapon systems in their own territories.

The third sub-market is that amid the developing states that used to be characterised by re-transfers in the 1950s, but is currently dominated by trade in arms produced by the third-tier emerging suppliers (Catrina, 1988:43–44). These armaments, as a matter of course, are less sophisticated than those produced by the leading suppliers, albeit their exclusive transfer to the developing world makes their comparative design simplicity an advantage in terms of employment and maintenance. This advantage is also reciprocated to the suppliers, as their simple designs require low labour costs and therefore provide cost advantages to the recipients.

The fourth and final sub-market is the one facilitating trade between the emerging suppliers and the developed industrialised states. As a recent phenomenon, it is characterised mainly by sub-contracting arrangements or the exportation of the most sophisticated products from the emerging suppliers, most of whom are in the developing world (Catrina, 1988:44). This sub-market is complimented by the fact that the electronic nature of modern warfare has demoted major weapon systems into mere platforms that have become launching vehicles for complex systems that include missiles, accompanying penetration mechanisms and defensive equipment. Therefore, to overlook the sub-market for components, ancillary equipment and spare parts would imply a certain degree of

myopia as this dimension refers to a specific level of autarky that states have achieved in the independent production of some weapon systems (Harkavy, 1975:15–16). This does not mean that, in future, the transfers of major weapon systems are not going to persist, as even the most leading of the arms producing states still rely on others for certain sub-systems. Hence it is important to realise that not only complete weapon systems require analysis, since this may result in misleading inferences.

Spare parts and components are, according to Harkavy (1975:16–17), also essential when viewed from a politico-strategic perspective, as these can be denied to certain recipient states as a leverage waged by suppliers, who require the recipient states to fulfil certain politico-strategic objectives. Furthermore, from a positive angle, spare parts and components can also be used as a multilateral control measure. Supplier-recipient relationships are usually stabilised through the continued requirement for spare parts in order to maintain weapon systems, regardless of mutable diplomatic arrangements. Equivocally, recipients are generally compelled to retain an open and diversified range of sources for continuous supply, mainly as a means to avert a capricious, and therefore a pernicious dependency relationship. A further alternative is for states to develop indigenous independent production of spare parts and components so as to limit the suppliers' leverage over the use of arms transfers. Those who do not have this capability are often forced to cannibalise some of their existing equipment thus reducing the number of operable equipment.

3.3.2.2 Technological Change and its Impact on the Arms Production and Transfer System

The hitherto transformation process of the global strategic environment was characterised by the twin elements of the technological aspect: technological advance and the diffusion of advanced technology. Buzan (1987:9) maintains that technological innovation was catalysed by the industrial revolution thus generating unevenness in the quality and quantity of technology possessed by the various countries. These two related but distinct criteria have a significant impact on the technological change in weaponry and how this affects the arms production and transfer system (Harkavy, 1975:41–42). The first impact is on the rate of turnover of the generations of arms, to wit, the period that exists between the different generations of equipment, thus defining the qualitative advance of that particular type of equipment. Another impact is the qualitative achievements or incremental qualities in the performance of a specific type of equipment over a given period of time, such as the increase in its firepower, mobility, or protection capability.

Within certain periods, Harkavy (1975:42–43) maintains that there are variations in the rate of general turnover in most weapon systems depending on various reasons. The funding and institutionalisation of research and development has an effect on the rate of generation as turnover of the weapon systems. Other aspects to consider are the duration of the lead times for research and development and the unit costs that could be substantial, particularly when the quantity of extant suppliers is taken into consideration. The difference between quantitative and qualitative arms production also needs to be explained. On the one hand, quantitative production is usually associated with imminent crises, and, on the other hand, qualitative production is more serene and involves the production of a series of prototypes and perhaps a few models to maintain a high level of technological capability. Finally, the introduction of new major weapons categories has a tendency of fuelling rapid technological growth, usually occurring as a spin-off from the civilian sector.

According to Harkavy (1975:46–47), phenomenal increases in weapon systems are frequently ushered in by the introduction of new sub-systems like avionics, missile systems and other equipment, thus resulting in changes in the patterns of the arms production and transfer system. The main effect of these changes is witnessed within the market where suppliers become concentrated, with the secondary leading and emerging suppliers failing to keep up with the rapid pace of change, while the primary leading suppliers, with their protected immense research and development facilities, benefit from it. Another effect is that suppliers are expected to pursue expeditious sales of equipment that becomes obsolete swiftly as a result of a rapid turnover of weapons generations. Primary leading suppliers are compelled by changing technological advances to be on par with or to be more advanced than the current changes, otherwise they face the possibility of being relegated to a secondary status.

This unevenness between and within suppliers and recipients can only be removed either through the various countries achieving a similar standard of technological *savoir-faire*, or if the state of international anarchy is replaced by an integrated political order or, in simpler terms, a world government (Buzan, 1987:9–10). Contemporarily, the two elements of the technological aspect are interacting actively and potently. The only atonement presently, Harkavy (1975:47) avers, is the fact that during periods of qualitative production it is mainly prototypes and possibly a few models that are produced, and hence it has an impact on the transfer system, as the amount of arms

transferred are conceivably limited. On the other hand, as a result of a slow turnover of weapons generations, huge weapon inventories that were stored for a long time are freed to dependent states, thus increasing the volume of arms transferred in the system.

3.3.2.3 The Offset Bazaar

As a result of deficits in their balance of payments, Stanley and Pearton (1972:118–119) argue that most arms purchasing governments are reluctant to incur the full foreign exchange costs of the armaments they are purchasing. As a result they demand an abatement of these costs, which are called offsets as a sincere condition of a purchase from the suppliers. Offsets are defined by Catrina (1988:33) as arrangements aimed at reducing the amount of currency required in order to purchase weapon systems or establishing mechanisms to create revenue that would enable the payment of such systems. These arrangements usually adopt the form of consequential agreements by the recipients aimed at augmenting their economy, mainly through the enhancement of their industrial or technological proficiencies.

These offset arrangements are often in the form of expiation performed by supplier states with large balance of payment surpluses in order to bolster their arms export prospects and consequently rejuvenate their arms manufacturing capacity (Stanley and Pearton, 1972:119). Offset arrangements are, according to Catrina (1988:34–35), generally divided into two categories: direct offsets that is compensation in related goods such as components or accessories of a procured system, or indirect offsets, involving compensation in another form besides what is related to the procured item. Nonetheless, offset arrangements can contain both their direct and indirect dimensions in one agreement, and their emphases in most current deals is a direct reflection of the preponderance of a buyers' market. Most suppliers, therefore, do not oppose offset arrangements, even if they are perceived to promote foreign competition, as long as they do not threaten their national security concerns. Examples of offset arrangements include counter-trade, overseas investment, co-production, licensed production, sub-contractor production, and the transfer of technology alongside co-production and licensed production.

3.3.2.4 Joint-Development and Production, License Production, and Other Inventive Arrangements

Prices for arms fluctuate according to the dictates of the market along with the identities of the parties involved in the transaction, the nature of their relationships, and the limits of the subsidies that the domestic government is willing to provide. Since the market has become a buyers' market as a result of its vehemently competitive nature, Pearson (1994:38) declares that transnational mergers, take-overs and strategic corporate alliances amongst firms are beginning to emerge with the intention of co-producing or co-marketing armaments through amalgamating resources to strengthen their sales. This transnational interaction is characterised by corporate partnerships through foreign investment, international subcontracting, international licensing, and joint ventures. These co-operative arrangements, according to Kolodziej (1979:20), are "techno-economic relations" between states in the designing, development, production and marketing of armaments, with the main transnational actor being the private firm or parastatal, resulting in a different set of relations when compared to those of the national or subnational actors.

These relations are based on technological, economic and strategic capabilities and requirements of the enterprises along with their reliance and impact on the policy-making processes and necessities of the governments with whom they have coupled aspirations. Furthermore, they are motivated by two pressing essentials: the requirement to minimise the costs of new armaments that are nationally produced and the ambition to achieve a higher level of technological advancement for the state's armed forces (Kolodziej, 1979:20). Transnational collaboration is perceived by Pearson (1994:40) as a means of maintaining "the military-industrial-scientific technological systems" of the various states enticed into technology sharing and joint development and production as opposed to nationalistic proclivities and the reality of the costly processes of national production. However, the future seems to be in favour of larger production units as well as the preponderance of transnational co-production albeit these processes might be hampered by the emergence of trade blocs or regional arrangements that might implement barriers for external units. For Stanley and Pearton (1972:151), co-operation and co-production are means through which supplier states augment their position in the international hierarchy of power that occurs by enhancing these states' industrial and military capacities.

The arms industry, therefore, as a technological leader for industry, due to its nature and character, usually lays claim to the significance of defence or the military on national policies, and thus is,

according to Stanley and Pearton (1972:151–152), susceptible to the concept of the balance/hierarchy of power. The arms industry is in most instances a measure of the state's position in the international hierarchy of power and therefore the expansion of the role that it plays in the international arms market reflects the role it plays in the international political economy. In trying to resolve the dilemma between arms production and general development, governments often emphasise the importance of spin-offs from the arms industries into the civilian sector, particularly as governments are penchant to fund the former rather than the latter.

The advantages of these collaborative ventures, Kolodziej (1979:20) argues, are that expenditures become shared between the parties involved, even though the endeavours are normally costly. An assured market is always availed by the participating states and they also pool their promotional capacities in the marketing of their jointly produced commodities. Political or strategic national considerations or commitments do not constrain exports of the arms produced, and there is an amalgamation of talents that otherwise would have been thwarted by narrow national considerations (Kolodziej, 1979:20–21; Frank, 1969:174). This allows for different states to share the skills, assets and resources to which they could not have access before. Complementing amalgamation as an advantage, is sharing, which permits concentration on a few types of weapon systems as well as the regulated phasing of each generation, thus addressing the problem of managing the whole operational flow. The fact that the sources of raw materials and equipment, along with sub-contracting, are expanded, thus reducing the element of dependency on certain, and sometimes monopolised, sources of supply, is another advantage. In addition, the cancellation of a project is no longer at the discretion of any individual government, and this acts as a guarantee to most manufacturers (Stanley and Pearton, 1972:148–149).

Co-operation reduces the desperate need that most suppliers apperceive for exports, mainly as a result of having to sustain a project since states involved in the project compose a potential, if not a definite, market. Moreover, in the export market co-operating states are advantaged to secure contracts as they can reduce the average costs to marginal costs in pricing their sales (Stanley and Pearton, 1972:149–150). Finally, and especially important to the firms, is that individual governmental interference is restrained since management falls into the mutual mechanisms of oversight and control. Often, governments are averse to rescinding or retracting from such ventures as they bring to question the crucial issues of national and co-operative security and political alignments amongst the participating states regardless of the technological or economic imperatives

involved. Therefore, participating governments are always under extreme internal and external pressure to make these ventures successful as their failure implies higher costs and losses for them (Kolodziej, 1979:21).

Frank (1969:175) maintains that co-development that may ultimately lead to co-production, is mainly reliant on the identification of the parties' politico-strategic and military requirements and resources during the early phases of research and development, and as such, the technological spin-offs can be defined earlier in the production cycle. This type of collaboration, prevalent in Western Europe (with the ultimate intention of creating an integrated defence and security community on the basis of collective or co-operative security), has been termed the "internationalization of the arms industry" (Pearson, 1994:38–39). However, the arms industry still retains a strong proclivity towards nationalism, as governments, particularly those of the leading powers, have scrupulous intentions of maintaining strong domestic arms industries to provide for their armed forces as well as to ensure an austere regulation of the arms trade. Such an atmosphere does not augur well for a stable internationalisation of the arms industry, which could ensure larger and more competitive elements within the market. Governments are still cautiously inclined towards ensuring that the collaborative ventures guarantee satisfaction for their own states, particularly the revenue to be received and the extent of control that they have to exercise.

The nature and the size of the market, which is defined and conceived by governments, determine the number of available firms in each country. As a result many firms are forced to restructure into mergers or to downsize depending on government plans that are inclined to support the surviving giants. Such a situation leads to idiosyncrasies in terms of production: some, like Russia and the United States, still retain their overall capacity in sea, land and air, and others, like Sweden, prefer to specialise in specific systems while purchasing other needs from other sources. Others, like the United Kingdom and France, maintain overall production but also trim down their firms to fewer units and have selective practices in terms of awarding contracts (Pearson, 1994:40). It is usually in the governments' and manufacturers' interests, according to Stanley and Pearton (1972:155–156), to maintain arms production to such extents that heavy subsidies have to be injected to keep it as intact as possible. As a result of national security considerations states prefer to avoid specialisation to ensure uninterrupted supplies on the principle of autarky. The rationale is always similar: that national defence and security rely on an independent arms production capability, which in turn

promotes national independence in politics and technology, and accordingly bestows *lebensraum* (literally) to manoeuvre.

However, the conditions are not always in favour of an autarkic approach in the majority of cases, except for those with a formidable endowment of resources, as well as the rare scale of their arrangement. Therefore policies of protectionism that most states adopt have to be trimmed down such that they are commensurate with their capabilities, albeit these also need to be weighed against the exigencies and the odds for co-operation and co-production (Stanley and Pearton, 1972:156). An alternative is often licensed production that, according to Frank (1969:173), also provides several advantages, such as the fact that foreign markets that have been inaccessible before become permeable at a minimal investment cost. Secondly, taxes that are usually imposed on royalties are lessened when compared to corporate taxes that are levied on permanent establishments. Thirdly, domestic production is often exonerated from expenses that are accrued due to the adjustments that need to be implemented to satisfy, sometimes unstable, foreign requirements. Finally, trademarks and patents are established and protected, and at the same time indications for future demands are identified and the knowledge of other possible markets is achieved. The major handicaps are that production control is inadequately monitored and that the licensee may develop to become a competitor after assimilating the technological know-how.

In order to avoid such handicaps states resort to other arms transfer arrangements, such as the loaning of weapon systems from the supplier state or any other foreign armed forces. The loaning of equipment, according to Catrina (1988:39–40), is usually preferable for training purposes since their utilisation in actual combat might involve their dilapidation or destruction. Some states that lack the facilities to conduct their own research and development of weapon systems habitually request this expertise from those states or firms that have the capacity. There are similarities between these arrangements and straight transfers as far as the production process is concerned; or with licensed production if components and technological know-how are transferred. When compared to a straight transfer arrangement, the main difference is that the sponsor has rights to the technological knowledge of the product. Whereas comparing them to a licensed production arrangement, the sponsor is involved earlier in the agreement, insinuating its efficacy on the overall design. As a variant, foreign firms can be invited as consultants to enhance domestic research and development.

Most states that do not have the capacity to purchase new weapon systems, Catrina (1988:40–41) asserts that they resort to the upgrading of their extant systems that is often (but not always) provided by firms that produced the initial system. The process of upgrading or modernising extant systems and platforms is one of the ways in which operational readiness of an armed force that is running short of funds can be sustained to a level that can compete with or even outdo in vogue and expensive systems. Nevertheless, if these are the characteristics of the contemporary arms market, what role is then played by technology in the arms production and transfer system?

3.4 THE DYNAMIC SIGNIFICANCE OF TECHNOLOGY

3.4.1 The Military Technological Revolution

Krause (1992:18) refers to Van Creveld's assertion that technology pervades and governs war. According to Krause (1992:19–21), the possession of modern armaments becomes globally a central element in the determination of the hierarchy of power. If military innovation, on the one hand, is understood to be an exogenous process, then technological innovation determined the evolution of the modern state system by providing advantages in warfare to those states that had the wealth and social organisation to afford and utilise modern weapon systems. For modernisation to take root it had to be mediated through the state system of which technology, particularly its military dimension, was assumed to provide the central impetus. Technological change and progress, on the other hand, can be viewed to be an outcome of a series connection of social and economic forces, which results in some states capturing the process by accepting its inventions. Nonetheless, both these processes are intricately intertwined and perhaps each might have occurred in a different epoch. For instance, technological innovation might have been completely exogenous until the Industrial Revolution as the state became actively involved in the research and development of modern technologies. The states' involvement in military innovation increasingly resulted in the establishment of military-industrial complexes that were obvious in the connections between state power and the early stages of military production.

Although arms transfers are linked to the inability of some states to produce arms, Krause (1992:21–22) avers that military technological innovations transform the arms transfer system. These changes in weapon systems occur in an incremental or revolutionary manner. Incremental changes in weapon systems involve changes in their destructive power and the nature of their employment, but

do not, effect fundamental transformation in the doctrine, strategy and organisation of the armed forces. Revolutionary changes, on the other hand, which do cause these changes, require the concourse of technological changes, changes in state organisation, and changes in economic foundations in order to force radical transformations in the overall organisation for warfare. Certain events in history, according to Gouré (1993:175), came to be noted as military technological revolutions: the German *blitzkrieg* that was designed on the basis of the new Panzer divisions in conjunction with effective close air-support; as well as the utilisation of aircraft carriers and amphibious landings by the United States in the Second World War. Gouré (1993:175) claims that if history has ascertained the existence and potential of a military technological revolution then the concept is elusive because scientists, policymakers and military practitioners have been poor in estimating and predicting their effects in future engagements. This is due to the fact that it is very rare that decisions have been made on the basis of the utilisation of new systems. Therefore, both incremental and revolutionary transformations can not be generalised, and thus are unpredictable (Krause, 1992:21).

The concept of a military technological revolution, according to Gouré (1993:176–178), originated with Soviet military strategists who were trying to comprehend the fate of changes to the means and methods of combat on warfare. Soviet scholars identified three modern revolutions in military technology that have shaped the conduct of warfare: (1) the development of gunpowder, muskets and cannons in the eighteenth century; (2) the mechanisation of warfare with the introduction of the internal combustion engine; (3) the evolution of electronics and nuclear capabilities; and (4) the one which is yet to come, according to Soviet Marshall Ogarkov (excerpted from Gouré, 1993:177), that is based on advances in sensors and computing systems and may put conventional weapons on par with nuclear weapons in terms of accuracy and efficacy. Krause (1992:22) confirms Gouré's conception of the military technological revolution and he avers that advanced electronics and computers could also lead to a new revolution in warfare, particularly in the field of "stand-off" and "smart" weaponry, however, contemporary applications are still incremental rather than revolutionary.

Qualitative changes brought about by the industrial revolution resulted in a rapid pace of change and a gigantic expansion of technological capabilities both in the civilian and military sectors, thus affecting every sphere of society. These changes, according to Buzan (1987:19), were a manifestation of abstruse changes in human knowledge and social organisation and as such not

uniquely or primarily driven by military interests, but improvements of military instruments were a result of those changes. The main effects in the military sphere were manifested in terms of five capabilities: firepower; protection and concealment; mobility; communications; and intelligence. Accordingly, Harkavy (1994:23) directs one's attention to the conjecture amongst analysts that the Gulf War ushered in a military technological revolution or that it made such a revolution imminent. The character of the Gulf War and the sophistication of the technology applied proved that the coalition forces, particularly under the leadership of the United States, were really in the midst of a military technological revolution, which was still in its embryonic stage. The quality of equipment utilised impressed the whole world and really gave a prognosis of the nature of future warfare (Gouré, 1993:177).

According to Krause (1992:22–23), the technological revolution is followed by a continuous process of modern technological development, which involves scientific discovery, invention, innovation, and the diffusion of technology through far-reaching imitation. There are two processes that forge the nature of production and transfers, namely, the reduced earnings in investments on new technological innovations as production becomes restricted to its original source, and the confinement of commodities to only domestic markets whereafter it is exported and then manufactured externally (through direct foreign investment), and finally procured by the source from foreign markets. Notwithstanding, these processes have a direct impact on the arms production and transfer system.

Regardless of the peculiarity that characterised the revolution in military technology, Buzan (1987:26–28) argues that it should not be considered as existing outside of the broader revolution in science, technology, and human finesse. The knowledge and the skills that generated the military technological revolution are indistinguishable from those that are characteristic of civil technological development. Similarities between the two ensure that civil technological advancement will always have military applications, and as such, any industrial society has the potential to convert its civilian technological capacity into a military capability. Arms innovations are not necessarily aimed towards usage in war, as there are other motives that are technical, political and economic besides warfare itself (Pearson, 1994:9–10). Political leaders' enthusiasm with new weapons, on the one hand, are rooted in political interests that can be accomplished, such as influence or conquests in their interactions with allies and enemies respectively, while firms, on the other hand, are basically interested in profits. Therefore, both concur that new military

technology procreates power. The intention of inventing weapons is to achieve psychological, political and military leverage over rivals, and as such, weapons intrinsically do not always determine the course of war. Weapons can influence the cost of the war in terms of personnel and resources, and in that sense, its results.

Reynolds (1989:151) also agrees that it is not weapons that give a war its character, but the protagonists' will. Reviewing the Second World War, Reynolds (1989:151) concluded that there was "little evidence that control over weapons produced a consistent rational relationship between the means of violence and the ends sought by its use. The simplest solution, both in dealing with the enemy and in dealing with the allies, appeared to be to allow the means of violence to dictate the ends sought. The demand for unconditional surrender and total war were the results. Both weapons and will merged to create virtually an a-political conflict – the negation of rational violence". Gouré (1993:176) believes that the successful exploitation of revolutionary technology does not only require the capabilities of new technologies or the willingness of the politicians to provide funding, but other factors have to be considered. These factors, *inter alia*, include national approaches; the nature of military institutions; the quality and standard of military strategy; the limitations and opportunities of geography; and the combination of military genius, fortitude and sheer fortuity. It is virtually agreed, therefore, according to Pearson (1994:10), that the most decisive factors in any state's abilities to wage war are it's overall productive capability, the number of effective allies, as well as the quantity of capable personnel that it has been able to mobilise in order to win a war.

3.4.2 The Diffusion of Military Technology

The diffusion of military technological innovations, according to Krause (1992:23–24), happens in a politically, economically and socially dynamic milieu that determines its affability. This diffusion occurs in three categories: material transfers (machines and materials); design transfers (blueprints, formulas, and documents); and capacity transfers (scientific knowledge and technical expertise). Factor endowments that determine the limits of the transfers are multitudinous and *inter alia* include local demand, investment capital, research and development investment, inputs of raw materials, manpower expertise and costs, infrastructural support, cultural barriers, the significance of returns of scale, and political will. The last factor is essential since military production requires the support and participation of the state for its accomplishment and sustenance. Buzan (1987:36) maintains that the prevalence of revolutions in military technology augmented the significance of technology in the

dispersion of military power and as a result expanded the range of inequalities in terms of capabilities among the various states. The role played by arms transfers is to truncate the gap between those who have the potential to produce armaments and those who do not, but at the same time the qualitative advance pursued by the technologically advanced states ensures that the gap is continuously dilated.

The distinction between states occurs in their ability to adapt weapons and/or moreover, to auspiciously capture the innovative process that depends entirely on the existence of the above-mentioned factors, central among them being the availability of basic knowledge, expertise and methods (Krause, 1992:24–25). This is a central component of military strength that guarantees the leading supplier states a qualitative edge in military technology. The qualitative edge is crucial in ensuring their power position as well as their security, and consequently, by pursuing this qualitative advance, they stimulate the process of technological diffusion. Therefore the leading supplier states struggle to acquire or maintain "the capability to compete at the leading edge of technological innovation" (Buzan, 1987:36–37).

The qualitative advance determines the standard for the global system and as a result pressurises the process of technological diffusion (Buzan, 1987:38). Participants are obliged to either improve on their capabilities or face the consequences of being second to those who do. This is reinforced by the tendency of leading supplier states to inject the qualitative advance into the system through sales, aid or assistance for political and/or economic reasons. The extent of competition amongst the producers is so intense that they even fail to maintain most of their current innovations for their own forces. This process of diffusion uncompromisingly elevates the standard of military power among the secondary powers thus augmenting their incentives to obtain further sources of technological advance so as to promote and preserve their military precedence. Moreover, innovations in military technology effect changes in warfare as they become assimilated into the values and structures of society. These changes, Krause (1992:25) argues, have a double-pronged significance. Firstly, they reveal a dynamic adaptive interaction between society and technology, as their reciprocal responses may lead to a long-term sustenance of a social order. Secondly, the ability or not of society to assimilate technological innovations determines the state's place in the international hierarchy of arms production and transfers. There are those "that cannot use modern military technology, those that use it but cannot reproduce it, those that can reproduce it but not adapt it, and those that can adapt it but not innovate" (Krause, 1992:25–26).

Technological advance becomes crucial between rival states at the leading edge: there is always a struggle to ensure that the antagonists are unable to make a demonstrative breakthrough that would undermine their own capabilities. As a result, rivals are always under pressure to acquire and preserve high standards of technological innovation. The process of arms transfers has become synonymous with the process of qualitative advance that trade creates within the civil technological sector, and the continuos pressure that is exerted on states to keep up with the pace of technological innovation that is bound to outdo them if they are not competent. Albeit the processes are similar they have different consequences, specifically with regard to the state's weaknesses. Civilian technological weaknesses result in the lowering of living standards whereas military technological weaknesses may result in the vanquishing and annihilation of the state, thus compelling the acquisition of precocious technologies that are peerless in the civil sector (Buzan, 1987:38–39). This is due to the upward trend in standards incited by the pace of qualitative advance among the leading military producers. Moreover, the recipient states are also obliged either to match or attain an edge over their opponents by purchasing modern weapons from these producers.

3.4.2.1 The Mechanisms of the Diffusion of Military Technology

The diffusion of military technology, according to Buzan (1987:39–40), occurred in the following ways: through the physical and political expansion of the states that possessed the technological capabilities; through the transfer of weapon systems to those states without own capabilities; and by the transfer of technological know-how and capabilities to the centres of control. The first element of the spread was prevalent in the colonial period, and currently in instances where foreign bases are acquired, whereas the spread through the transfer of technological know-how became prominent after the Second World War. The major contributing factor of the spread was the arms trade, whose primary motivation was and is the potent configuration of vested interests involved: the "supply push" and "demand pull" of the suppliers and recipients respectively. Analysts generally view the exportation of conventional arms as a significant form of the redistribution of power from the industrialised core to the developing periphery that is presumably equal or greater than the general diffusion of economic power. Simultaneously redistribution is seen as generating an important dependence relationship between the suppliers and the recipients (Catrina, 1988:15).

Catrina (1988:15–16) insists that arms transfers in this context are perceived to be a web of interactions and relationships used by the powerful industrialised states to perpetuate their control over the less-developed states in the south. These activities and relationships are viewed to be inclined towards procreating a cumulative pattern of leverage, aimed at maintaining the status quo of an international hierarchy of states. The recipient states are regarded as becoming more and more dependent on the leading supplier states, while at the same time by refusing to be militarised, they become more vulnerable to intervention and blackmail by other states, groups of states or insurgent and/or terrorists groups. This dependence occurs in the economic format, wherein the arms suppliers transfer their burden of economic crisis onto the recipient states through arms exports, or in the politico-strategic format, by conveying the operational know-how to the purchasers of their weapons in the form of instructors or special training arrangements. This dependence relationship is greatly pronounced when arms, spare parts or component supplies are disrupted, particularly when there is no alternative source to resort to.

According to Buzan (1987:44–45), de-colonisation became a catalyst to the process of the spread of military technology as new states emerged and new centres of political power becoming local terrains of conflict and rivalry. These states, as non-producers of arms, increased the market for armaments and the consequent military imbalance had to be corrected by ensuring that non-producers were guaranteed an unending supply of arms. On the other hand, the urge for economic independence by the newly de-colonised states was accompanied by a desire to strengthen industrial development and this pushed some of these states to acquire their own industrial capabilities, of which some had military industrial production as a priority. Generally, most states struggle to reduce their dependence on foreign technology by developing their indigenous productive capabilities. However, their late entrance into the arms business means that they have a difficulty catching up, and consequently have to rely constantly on other arms-producing countries for the advanced technologies they do not possess (Pearson, 1994:12). Success became uneven since, on the one hand, not all of these states managed to create an industrial base strong enough to meet their own military requirements. On the other hand, others even managed to become distinguished competitors in some sectors of the arms market (Buzan, 1987:45).

Pearson (1994:11–12) postulates that the process of arms production and transfers evolved parallel with the general evolution of the capitalist international economic system as breakthroughs in engineering were achieved together with the demands for larger stocks of armaments by national

governments that replaced local rulers. Leading weapons producers exploited the existence of wars and a larger arms market to sell their weapons, thus permitting their firms to attain as much profits as possible in order to reduce production costs in developing new weapons generations. Technological precedence was achieved through arms innovation and the arms trade became a conduit towards gaining investment capital and for maintaining the technological specialities accomplished. Consequently, the sources of armaments in the international system multiplied albeit that this was not as a result of the straight transfer of arms. An adequate civil industrial base became a necessity to enable copies to be manufactured locally or, in most cases, the capability to manufacture locally was directly transferred from suppliers to recipients (Buzan, 1987:45).

Buzan (1987:45–47) argues that straight transfers of armaments do not encourage the development of an industrial capability to produce arms, but an adequate civil industrial base is essential for local copies to be manufactured. As a result, a civil industrial capacity inherently contains a military capability. Some of the arms productive capability is a direct spin-off from the broader process of economic growth and development. The transfer of a military manufacturing capability also reflects an economic and political competition that exists among supplier states as a result of the existence of a buyer's market. In most cases these conditions included the transfer of technology, facilities and know-how, thus managing to develop indigenous arms production capabilities that reached eminent levels of sophistication. Albeit that most of these states have managed to achieve a considerable level of sophistication in their arms production capabilities, they still remain dependent on more advanced suppliers for specific weapon systems that are of "the highest standard of technology available" (Buzan, 1987:47).

Looking at the history of the arms production and transfer system from 1945 to 1955, Krause (1992:82–83) opined that it appeared to deviate from the ones before it because of four reasons. First the virtual destruction of Europe's industrial infrastructure after the Second World War omitted most states that expectedly could have become participants in the arms production and transfer system. In addition, the division of Germany, the prescription against West German arms production and exports, and East German and Czechoslovakian submissiveness to the Soviet Union, put a strain on these states' role in the arms production and transfer system. Their subsequent emergence as major arms suppliers reduced them to a second-tier status. The United Kingdom was an exception as a result of maintaining its arms industries intact after the war and remained a second leading arms exporter after the United States. However, the United Kingdom became a victim of

the new arms production and transfer system by failing to maintain its first-tier status as a technological innovator along with the United States.

The second reason given by Krause (1992:83–84) is that the Soviet Union, being in the second position to the United States if arms transfers to Eastern Europe are taken into consideration, preferred to be detached from the system. This was due to the existing economic and political exigencies for rapid recovery, consolidation of accomplishments in Eastern Europe, and the post-war bipolar predicament. The Soviet Union could have been a major player in the arms production and transfer system if its industrial and economic bases and global political stature then had been taken into consideration. It was not until 1955, after the arms deal with Egypt, that the Soviet Union became a substantive global supplier. The third reason was the ascendance of the United States as a leading arms producer and supplier, which in part was heightened by the dearth and lassitude of other contestants, and in part a result of the wartime increase in military industrial production. Primarily, the post-war military assistance it provided to the European allies encouraged defence procurement and expedited the rate of military technological transformation, consequently facilitating other states' levels of arms production. After the Second World War and until the 1960s, surplus and second-hand arms were transferred free or at bargain prices to allies and friends to achieve politico-strategic objectives. The United States government realised the probability of regaining research and development funds as well as satisfying allies by selling to them the latest arms and equipment. Other governments followed suit, thus initiating the modern push of arms transfers "through government assistance, promotions, regulation, guarantees, and credits" (Pearson, 1994:12–13).

Krause (1992:84) maintains that the evolutionary dynamics and the framework of this period became more apparent in the 1960s especially after the arms deal between Egypt and the Soviet Union in 1955, which encouraged a concatenation of agreements, predominantly in the Middle East. France, West Germany, Czechoslovakia and Italy began to produce armaments for their domestic requirements and for export, while at the same time, an inconsequent appearance of smaller suppliers such as Sweden, the Netherlands and Switzerland occurred. Nevertheless, the United States' predominant position was not disputed despite the shift of the locus of political competition to the Third World and the advent of new markets with the acceleration of the de-colonisation process. The end of the Cold War, although resulting in the abating of tensions between the United States and the former Soviet Union, restrained foreign assistance and states were compelled to

procure their military equipment and accessories from commercial sources. Those states which had an adequate industrial infrastructure, a sufficient resource base, and the political will to produce and export arms, secured their emerging supplier status, but were confined by post-independence and post-colonial politics from developing competent arms industries.

3.4.2.2 The Results of the Diffusion of Military Technology

The spread of military technology resulted in the creation of a hierarchy of states that was determined by their capabilities in terms of arms production. The top echelon was occupied by those states that could produce the whole range of weapon systems, and at the bottom were those with limited capability or non-producers (see Figure 3.1 below). The primary leading supplier states, according to Buzan (1987:47–48), have a complete arms-manufacturing capability, complemented by an adequate research and development capacity that ensures top-of-the-edge technology. These producers and suppliers in the first-tier, as the dominant producers of arms, according to Krause (1992:32), possess the largest research and development investments and local markets, thus having the potential to produce the whole range of armaments at the technological frontier. Therefore, their arms industries are not dependent on exports for their well being albeit that they are prominent exporters as a result of the demand placed on their advanced weapons. The benefits they obtain from arms exports make them to concentrate on their perpetuation regardless of the long-term effects this might have on their productive capacities as they transfer the technological know-how through licensed- and co-production agreements.

Bottom-of-the-range states are either temporarily or totally dependent on the arms trade for their modern weapons' requirements for the maintenance or signification of their independence (Buzan, 1987:48). The middle range are partly producing states, which have a significant capacity to produce armaments of considerable sophistication but do not match the capability or the quality of armaments produced by top-of-the-range states. Secondary leading, middle-range or second-tier suppliers are beneficiaries of licensed and co-production agreements with the primary leading suppliers, as they have less research and development investments, smaller domestic production and procurement capacities. Therefore, according to Krause (1992:32), they have to depend on exports or state subsidisation for the interest of their arms industries. Their export shares are constrained by their incapacity to produce top-of-the-range armaments relative to the primary leading first-tier

suppliers, and this might also constrain their ability to produce the whole range of armaments, meaning that they must secure a niche through specialisation.

Figure 3.1 Results of the Diffusion of Military Technology

Adapted from Keith Krause (1992:31 - 32)

Secondly, economic pressures associated with their lesser export market share compel these secondary leading second-tier suppliers to export, along with the armaments themselves, the knowledge and skills required to manufacture arms (Krause, 1992:32). Almost all the secondary leading second-tier producing states are dependent on the primary leading producers and suppliers for some of their sophisticated top-of-the-range arms and leading edge arms-manufacturing requirements. Buzan (1987:48–49) believes that there are only two ways in which the secondary leading producers and suppliers can achieve independence in arms production. Firstly, through

matching the research and development pace of the first-tier primary leading supplier states. Secondly, by pursuing independence at all levels, which is currently lower than that of the primary leading supplier states. Contemporarily most of the secondary leading producers and suppliers are partly sellers and partly buyers of armaments.

The secondary leading producers and suppliers, Buzan (1987:49–50) argues, were motivated by different reasons to acquire an arms production capability, but primarily it was their intention to reduce their reliance on other suppliers, particularly to minimise their political vulnerability to pressure from other arms producing countries. For these countries the levels of participation in the arms production and transfer system depends on perceptions of themselves within the international system as well as on the capacities of their economic bases. Most of them create specialised niches within arms production and transfers so as to enable them an uninterrupted participation according to the capacities of their economies and to amortise the costs of research and development, production runs and imports. However, most of them still rely on foreign inputs for their principal weapon systems. Even the primary leading producers have to rely on other suppliers for some of their weapon systems.

Political and economic considerations thus drive arms production policy intentions. Some states, like Japan, have the industrial capabilities to become prominent arms producers but instead prefer to play a less discernable role. Other states that did not have sufficient industrial bases to make them prominent suppliers were pressured by military and political considerations to develop such bases and since then have developed to become prominent suppliers (Buzan, 1987:50). These are the third-tier emerging suppliers, who are currently maturing within the arms production and transfer system. Such emerging suppliers are heavily dependent on exports and find their market niche on specialised requirements for low-cost, easy-to-operate and unsophisticated armaments. As they have much lower research and development investments, their production and exports share is extremely constrained. Their arms industries are perhaps sustained by a strong political will domestically, which overlooks economic considerations and is committed to procure locally produced weapons. The sustainability of their arms industries, Krause (1992:32) avers, is not guaranteed.

The results of the diffusion of military technology therefore leads to the sustenance of a hierarchy of states, which is fluid and dependent upon contention and struggle within the international system.

More often than not such contradictions and the ensuing contests involve efforts to strengthen the armed forces, and most specifically the implements of war. It is usually the defence industries that become the focus of attention for the arms producing states or the procurement agencies for those states that rely on foreign suppliers for their defence requirements. Efforts by each state to strengthen its arms development and production capabilities or to acquire more advanced armaments propels other states to do the same and thereby creating an incessant cycle of arms innovation and development within the system, which is referred to as the arms dynamic.

3.4.3 The Concept of the Arms Dynamics

The concept "arms dynamic" was proposed by Buzan (1987:72) in order to provide coherence to the concept of arms racing that "suggests a self-stimulating military rivalry between states in which their efforts to defend themselves militarily cause them to enhance the threats they pose to each other. In other words, given the political condition of anarchy, states are vulnerable to a type of competition with each other in which military technology is a major independent variable" (Buzan, 1987:69). Buzan (1987:70–72) argues that "military technology has its own historical dynamic of qualitative advance and geopolitical spread. The idea of arms racing thus suggests that the dynamic of military technology is in major part responsible for one of the central problems in relations between states." Arms racing, like arms transfers, lies at the centre of Strategic Studies, if it is viewed as the manner in which the instruments of force are utilised by those states that possess them and how these affect their relations. Together with arms transfers, it also links Strategic Studies to other spheres of international relations, not just in the military spheres, but also within the domains of economic development and political interaction. Whatever the problems may be with the concept of arms racing, it delineates a significant element that is distinct from other political or economic sources of conflict and co-operation in relations between states.

The aspect of a race insinuates a situation of vigorous competition between states for the accumulation of military strength with the objective of winning the struggle to alter the military balance of power. However, the race that is often referred to is concerned with the states' effort to update their armed forces without necessarily altering the military balance of power. Arms racing, characterised by vigorous competition would be an abnormal situation under peaceful conditions and as such it will fail to be a designation for a normal updating of armed forces. To draw a clear demarcation between pure arms racing and the normal updating of armed forces, Buzan (1987:72)

suggested the concept of the "arms dynamic" that includes all the pressures that compel states to acquire and upgrade armed forces, which is not only a global process but also refers to specific circumstances of a state or sets of states. The "arms dynamic" (see Figure 3.2 below) is a continuum of the concepts of arms racing, on the one extreme, and "the maintenance of the military status quo", on the other, that can be used to denote the arms dynamic at its normality. "Maintenance of the military status quo can escalate into arms racing, and arms racing can subside into maintenance of the military status quo. Between the two lies a gray area in which the direction of change may be a more appropriate guide to events than any attempt to locate a given case on one side or the other of some strict but arbitrary dividing line. ...Because arms racing and maintenance of the military status quo are manifestations of the same over-all arms dynamic, they share many characteristics, and differ more in degree than in kind" (Buzan, 1987:72–74).

Figure 3.2 **The Arms Dynamic**

In the interaction between states as they pursue their military procurement programmes, these may be done within a wide range of objectives which fall far short of arms racing. These may be the routine practices of upgrading their armed forces in order to maintain their own stability within the uncertain conditions of international anarchy. These practices may be done in response to other states' practices or to the changes that the qualitative advance in technology introduces, which in the long run, will mould or be moulded by the domestic structure of the state concerned. Therefore, in order to demarcate between arms racing and the maintenance of the military status quo is to first identify between what is abnormal and normal behaviour respectively. Normal behaviour would be dependent upon "the nature of prevailing technologies, on the pace and scope of technological change, on the character of prevailing military doctrines, and on the character of prevailing attitudes

towards the probability, feasibility and desirability of war" (Buzan, 1987:114–115). Buzan (1987:120) maintains that by adding the dimension of the maintenance of the military status quo, a proportionate view to the issue of peacetime military security relations among states is provided than from the perspective of the arms race, which has a tendency of pushing interpretations towards extremity.

3.5 CONCLUSIONS

Technology plays a pivotal role in the arms business as it also creates a hierarchy of arms producers and suppliers towards the extreme level of relatively primitive recipients. Most states, on the one hand, have to rely on foreign suppliers in order to advance their technological dispositions. Arms producing states, on the other hand, are adopting diverse strategies as a result of uncertain global markets, so as to cope within the environment of international competition, some with little or no government funding. In reality, the military sector is globally constricting, as military regimes are being replaced by democratic governments, defence spending is lowered, arms industries are becoming impecunious, defence production is fading, military assistance is receding, and the arms trade has been severely asphyxiated. Nevertheless arms production and transfers still continue, regional arms dynamics still endure, advanced arms technologies are being developed, as well as local and regional conflicts are persisting. The slowing down of the procurement rate and the failure of the suppliers to attain a greater market share insinuates that the modern weapons economy is becoming complicatedly intertwined into the global economy and, moreover, increasingly internationalised.

The end of the Cold War introduced a previous trend of the freelance sale of arms with reduced or relaxed government control as they experienced both political and economic difficulties in restraining the arms trade. The entrance of expensive high-tech weapons may also lessen the extent of arms transfers, particularly when well-armed states start to prefer lower-tech but advanced equipment, perhaps as a result of the costs or because of the consternation to encourage unrestrained regional arms races. The inclination by developing states to acquire the technology to develop indigenous arms production, however, does not lessen their dependency on leading suppliers, since they still require the components and parts for continued production. Leading suppliers, on the other hand, also need the foreign markets to perpetuate their arms exports, thus a two-way street of interdependence is created, despite the difficulties and concerns that arms generate for the leading

suppliers themselves. The buyers' market encourages recipients to demand offsets and counter-trade arrangements from suppliers in the form of agreements to transfer valuable technology and, in turn, the suppliers have to purchase products from the recipients. Political and economic relations become complicated as recipients are afforded greater freedom of action at the same time perpetuating interdependence and supplier interference into their internal affairs.

After the Gulf War, the demand pressure for arms mounted, albeit below the peak years of the 1980s due to global economic problems. Moreover, the technological gap between the producers' and the recipients' armed forces has constricted, as current transfers are predominantly characterised by the conveyance of top-of-the-range weapon systems. The transfer of sophisticated weapons systems implies more technical support, which, in turn, suggests more dependency of the recipients on the leading suppliers. This implies that the diffusion of military technology is bound to continue into the future, and sources of arms, particularly secondary leading producers and suppliers, are forecasted to increase, thus making the arms trade to reflect a combination of the transfer of technological capabilities and of commercial off-the-shelf weapon systems. The arms producers will remain stratified according to the process of the technological advance, and this will ensure that only a few states will attain the status or remain as primary leading producers.

The demand for high-technology armaments leads governments in the developing world to employ diversification strategies and to adopt makeshift designs and add-ons for the upgrading of their equipment in order to imitate the leading producers' inventories at lower costs. This trend may result in the purchasing of intellectual property rather than hardware in future. The legacy of the Gulf War as well as the period of economic difficulties is determining the type, quality, and quantity of future weaponry, and efforts are currently towards developing the next generation of sophisticated computers, stealth, and electronically controlled armaments in order to increase firepower and reduce human vulnerability. Civilian advanced technology and the costs of production are also going to determine the character of future weaponry, while simultaneously problems of military security will impact negatively on the export market, perhaps persuading most producers to spend more on research and development rather than production. As more and more components and sub-systems are being dispatched, the black and grey markets will become more effective, particularly when unrestricted dual-use items are being transferred. Finally, emerging suppliers will become more preponderant and influential regionally, as weapons are a guarantee for such purposes within an unpredictable environment. Although economic productivity is perceived

to be a significant indicator of world power within the modern world, the mix and types of weapons possessed by any individual state are still regarded as the key to great power status. Is this, therefore, the rationale for states to transfer armaments?

CHAPTER 4 – THE RATIONALE FOR TRANSFERRING ARMS: THE INTERNATIONAL POLITICAL ECONOMY OF ARMS TRANSFERS

4.1 INTRODUCTION

The congenital connection between arms transfers, the ascendancy and influence of the supplier country and the subsequent dependence of the recipient country, according to Catrina (1994:200–201), received increasing attention from the research community, although without tangible "results that could be generalized beyond the identification of what appear as the most important factors determining the extent of such influence and dependence". For Quandt (1978:121–122) the influence of one country over another through the supply of arms is defined as "the ability to alter the policy of the recipient. ...The exercise of influence will typically involve resolving conflict between two states in ways that are consistent with the preferences of the arms supplier. The most dramatic cases of the arms influence relationship involve explicit manipulations of the flow of arms to effect policy changes on the part of the recipient."

An arms transfer is significantly substantiated according to its contribution to the military power of the recipient, and this power is utilised to force an adversary from exercising hostility upon the wielder's interests. Therefore, the relationship between the supplier and the recipient in the arms transfer system is the need for military power and subsequently security on the part of the recipient, as well as the need for influence on the part of the supplier (Frank, 1969:2–3). According to Lewis (1979:186), within the international political system, states try to change or sustain the policies, objectives and the behaviour of other states as the quintessential test of power, besides military capabilities. These anticipated orientations of other states involve the utilisation of incentives such as diplomatic allurement, economic aid, support of an ally, arms supplies, and/or outright threats. Therefore, influence is a means to an end, to attain a specific goal or to defend it. Arms transfers then can be used as influence to attain goals such as supporting allies in need; to gain access to bases; to protect communication and supply lines; to achieve deterrence, or to ensure commodity pricing or trading advantages. With the augmentation of the recipient's proficiencies the possibilities of that recipient's dependence on the supplier are dilated and this becomes a critical matter of national security as the relationship is both officious and precarious.

The system of arms production and transfers, which Kolodziej (1979:4) describes as a subsystem of international relations, can be arranged to be a product of four principal sets of relations between actors, to wit, "national, subnational, transnational, and international". Furthermore, Kolodziej (1979:4–5) provides three ways in which the actors are distinguished: their composition, their principal goals, and the targets of their actions – the latter one being the main item of distinction and conception as to which set of relations it belongs. The goals that an actor pursues are precisely articulated as it enters an arms transfer contract and these are operationalised and attained in terms of the reactions that are expected from the manipulation or control of the target actor(s). The connection between the goals and their target(s) is therefore the behaviour of the latter, which change in relative importance and duration as time changes. The relations between and within these levels of actors are horizontal and vertical in nature and grouped into three substantive sub-categories: politico-strategic; politico-ideological/diplomatic; and economic, which includes the dimension of science and technology. All in all, arms production and transfers are driven by three conventional motivations: military, political, and economic and this analogously means the pursuit of victory in war; the pursuit of power; and the pursuit of wealth (Krause, 1992:97).

The pursuit of victory in war, on the one hand, includes the intentions to: "(1) guarantee independence of arms supply to ensure military security; (2) act as a quid pro quo for military base/landing rights (or intelligence-gathering facilities); (3) assist friends and allies to maintain an effective (and/or common) defensive posture against external threats; (4) substitute for direct military involvement; (5) provide testing for new weapon systems". The pursuit of power, on the other hand, includes the intentions to: "(1) provide access to and influence over leaders and elite in recipient states in pursuit of foreign policy objectives; (2) symbolise commitment to the recipient's security or stability against internal or external threats; (3) create or maintain a regional balance of power; (4) create or maintain a regional presence; (5) provide access to scarce, expensive or strategic resources". Finally, the pursuit of wealth includes the intentions to: "(1) provide foreign exchange and positively affect the balance of payments; (2) reduce the cost of domestic weapons procurements through economies of scale; (3) maintain employment and infrastructure in defence-related industries; (4) recoup research and development expenditures; (5) use military production as an engine of growth for economic development" (Krause, 1992:97–98 [*numbering substituted by the researcher for convenience*]).

Thus, according to Krause (1992:98), the pursuit of victory in war and the pursuit of power are military-strategic, politico-strategic and diplomatic/ideological objectives that states try to achieve through arms transfers, whereas the pursuit of wealth clearly refers to economic objectives. Interdependence, therefore, can be circumscribed to denote the consequences of one actor's actions towards others, without the consequences being necessarily noticed by either of the two parties, or perceived to be deliberately fabricated. In most instances actors are not perceptive of the connection between the causes or conditions of arms transfers and their determining factors, and so actual and perceived interdependencies have to be delineated in order to account for the various actors' reactions (Kolodziej, 1979:5–8). Although it is not easy to discern the objectives that each actor is pursuing within an arms transfer relationship, as these objectives do overlap, for analytical purposes they will be addressed separately.

The objective of this chapter is to explain the interaction of politico-strategic, politico-diplomatic, and economic imperatives in the international political economy of arms transfers. The first items to be addressed are the politico-strategic reasons for transferring arms, which include the definitions of the concept of strategy and its objectives, the strategic incentives for arms transfers, and the politico-strategic benefits and costs. Secondly, the political-diplomatic and ideological reasons are looked at, and these involve the political significance of arms transfers and the waging of politics through arms transfers. Thirdly, the economic reasons for arms transfers are reviewed with a specific focus on the economic and technological incentives, the pursuit of development, the reasons for maintaining a domestic arms industry, the logic towards enlarging the market, and the economic benefits and costs. Finally, the various objectives for arms transfers are compared, particularly the goals of the different tiers of arms makers and suppliers, the politico-strategic and welfare imperatives and, at the end, the trends of the current arms production and transfer system.

Since the focus of this discourse, and accordingly this chapter is on the suppliers of armaments, it would be a colossal task to judge the success of the attempt to obtain politico-strategic objectives through the assessment and analysis of the reactions or the responses of the recipient states. In fact, if this effort was undertaken, it would do justice to a thorough appraisal of the whole processes of arms transfers, especially if Krause's (1992:8–9) concerns about the motivations of the recipients and the impacts of arms transfers on them (referred to in Chapter 1, pages 1–2), are also considered. Nevertheless, the researcher opines that through the comprehension of the suppliers' intentions in transferring armaments, one can deduce the effects anticipated with a little less regard of their

achievements. Attempts by John Sislin (1994) and Christian Catrina (1988) to determine the successes of influence did provide some answers but also resulted in a number of unanswered questions. A more gigantic research effort is needed that includes the recipient states' responses on a case-by-case basis. The next questions to deal with is what strategy and its objectives that states and collectives are pursuing in the domestic domain and in the international realm?

4.2 POLITICO-STRATEGIC REASONS

4.2.1 Defining Strategy and Its Objectives

The programme of action, relating means – in the form of violence or a threat thereof or diplomacy and negotiation – to ends – politically expedient to the pursuer – in a rational manner, under conditions of opposition or bargaining, is conceived by Reynolds (1989:15–17) as strategy. Strategy, in his view, "consists of a level of reasoning and action, in which both the means and the ends are mediated in action so that the latter are formulated and attainable through the creation and exercise of the former. ... To be rational both means and ends must be commensurable. In deciding on objectives the politician draws upon resources, organises and deploys them, and so on, but should not allow his course of action to be determined by his selection of the means" (Reynolds, 1989:17). Strategy, therefore, refers to the means that are employed or sanctioned to be utilised in order to meet policy objectives. In making policy, the state reflects what it is going to do by embracing what is intended and how that is going to be implemented. The series of finite decisions involved and the action that follows over time are known as policy.

These policy decisions include a very high political input (Baylis, 1987:2–3), and in the case of war, for example, Carl von Clausewitz (1980:605–606) argued the point that war was, nothing else, but an instrument of policy. This means that you cannot divorce war from political life unless you want to remain with something pointless and devoid of sense. He further reiterated that policy converted the destructive elements of war into mere instruments. War could not continue relentlessly towards the absolute, being incomplete and self-contradictory, it had to be treated as part of some other comprehensive policy because it could not follow its own laws. Hence, the US Institute for Defense Analysis points to a disposition amongst analysts of security and strategic studies to confuse policy and strategy. In trying to overcome this problem the Institute defined policy as "a rule governing

action or decision", and strategy as a "plan in accordance with which various means, including actions and decisions, are directed toward the achievement of objectives" (Staudenmaier, 1982:42).

If one adopts Beaufre's (1965:209) assertion of the essence of strategy as an "art which enables a man, no matter what the techniques employed, to master the problems set by any clash of wills and as a result to employ the techniques available with maximum efficiency", then strategy appears to be pertinent to whatever situation that requires the implementation of decisions, particularly if there is a clash of wills. Beaufre (1965:209) further provided an appropriate definition after considering the referred to definition that strategy should be viewed as the "art of the dialectic of two opposing wills using force to resolve their dispute." The objective is to compel, through the utilisation or threat of usage of force, the enemy to accept the terms intended to be imposed on him. A psychological reaction is required from the enemy that he does not pursue an endeavour to reverse what is demanded of him.

Strategy can thus be viewed as ends, ways and means, which implies that there are objectives envisaged through which certain courses of action can be achieved with the utilisation of given instruments (Beaufre, 1965:209–210). According to Buzan (1987:7), the strategists' unique speciality is about matters that relate to the instruments of force and how they affect relations among and within states. If strategy is employed towards the attainment of political objectives, these therefore become politico-strategic objectives, rather than economic, cultural, commercial or otherwise. They thus have a direct impact on the political and strategic relations between and within states and other actors in the international system, as well as on the national security of these states. Hence, they are closely intertwined with the problems of global and national security between and within states.

4.2.2 Politico-Strategic Incentives for Arms Transfers

The basic requirement for security and protection motivates states and groups to acquire arms. This is often influenced by several reasons such as: the supplier state's eagerness to allow or forbid certain kinds of weapon sales or military aid; the recipient state's domestic and/or foreign policies; interaction between the suppliers and recipients on matters of security and defence; the activities of private arms dealers; agreements or treaties; conflicts, including war and threats of war; technological developments; the price and quantity of arms; and the demands of doctrine and

strategy (Frank, 1969:23–25). National security interests are basically responsible for state suppliers and recipients to be involved in arms transfers relationships, and therefore can never be construed to merely reflect unilateral activities of supplying and receiving (Kolodziej, 1979:9).

According to Kolodziej (1979:9), arms transfers are actually political in character, because both recipients and suppliers want to achieve egotistic strategic interests that may or may not be commensurate; and the accomplished transaction may have diverse effects on the internal or external security relations of both parties. The ideal goal of arms transfers is to satisfy the military ambitions of the parties with regard to the international hierarchy of power, to augment their diplomatic position, and subsequently strengthen their respective regimes. Therefore, arms transfers are basically a low cost and a politically less irritable alternative to stationing troops abroad to secure what are perceived to be vital interests and to assist allies in need.

Pierre (1982:5) affirms that states usually acquire arms for security reasons, particularly towards their neighbours and to augment their reputation in the regional balance of power. This, therefore, constitutes the importance of viewing arms transfers from a regional perspective, because it provides a proper foundation for their analysis, comprehension, and control. Arms, according to Pierre (1982:5–6), have a double-pronged effect on the region into which they have been transferred. The first effect is that they, without intrinsically leading to war, may intensify contradictions, instigate an arms race, and make war conceivable. On the other hand, arms may have a positive effect on regional relations, by deterring bellicosity, by calibrating the regional balance of power, and by restoring general stability. Nonetheless, regardless of the convergence and divergence of security interests, these can both support the pursuit of an arms transfer relationship, as manifested in the support given to belligerent parties in a conflict.

In most instances suppliers do not have control as to how the arms transferred are to be used by the recipient. Kolodziej (1979:10–11) argues that the reason is that the incentives that prompted the initial transfer are usually stronger than those of guaranteeing as to how the arms are to be ultimately utilised. However, the degree of sophistication of the equipment transferred may provide a certain level of control for the supplier, particularly with regard to spare parts, maintenance or repair capability, and other components when an alternative source of supply is unavailable. This, as such, connotes a dependency relationship. Ideally, Stanley and Pearton (1972:65–66) insist that all states in the interests of national security prefer to be independent from suppliers abroad in their

arms acquisitions programmes, however, very few states possess the capabilities to do so. Besides the United States and the erstwhile Soviet Union, and presumably the PRC, no other state had a sufficiently wide armed force base that allowed for economies of scale in the production of sophisticated armaments without a resort to imports and exports. These states' defence industries could maintain a large measure of production, consequently accompanied by a competitive unit cost as they participated in the global arms market. This participation guaranteed benefits in their balance of payments, it ensured the amortisation of research and development costs, and moreover it reduced the costs of their armed forces' procurement programmes.

Within a supplier-preponderant dependency relationship, therefore, suppliers can exaggerate the controls at their disposal, such as arms embargoes, and restricting some or all of the supplies. The recipient, on the other hand, may respond by seeking alternative suppliers, cannibalise existing equipment for spare parts, improve on its indigenous capability to produce armaments, and even put domestic pressure on the supplier to continue with the required supplies. As a matter of fact, there are various trade-offs that suppliers and recipients seek in arms transfer relationships. "Where strategic interests are shared, where a common adversary has been identified, where there is an agreed-upon military strategy on how to deal with an external threat, arms and bases will be of a fabric" (Kolodziej, 1979:11). Moreover, Kolodziej (1979:11–12) maintains that arms transfers can also be utilised to advance regional security and to counter the proliferation of weapons of mass destruction, albeit there is little evidence that supports the success of the latter.

4.2.3 Politico-Military Benefits and Costs

Before grants or sales of armaments were utilised to further military ambitions abroad, states used to rely on alliances, which proved to be capricious and fragile. Allies, therefore, could be militarily strengthened through the grant or sale of arms, which could be accompanied by the possibility of obtaining or installing facilities within their territories. However, the granting or the selling of arms to allies was not only focussed on reinforcing their capabilities, since, according to Stanley and Pearton (1972:72–73), there were other benefits that the supplier state could obtain. The most substantiated politico-military benefits of transferring arms for suppliers included support for allies and friends; symbolic emphasis of friendly relations; influence of the supplier over the recipients; leverage on specific policy issues; rights of access to bases, facilities and over-flight rights; the

accomplishment of the goal of the non-proliferation of weapons of mass destruction; and for testing newly-developed combat equipment (Catrina, 1988:71–72).

The sophistication of the supplied arms would require a lasting maintenance and training relationship between the supplier and the recipient states, and this in turn would ensure that the supplier state maintains control over the combat utilisation of the equipment and subsequently over the military policy of the recipient state. The training relationship would require that the supplier state integrates its own forces within the military hierarchy of the recipient state and subsequently providing an opportunity for ideological indoctrination of these forces. Furthermore, arms exports could guarantee a certain level of standardisation within the forces of the allied states. Therefore, arms exports had an important politico-strategic role to play for ambitious or hegemonic states in spreading their military tentacles globally. In the first instance there was the utilisation of arms transfers in obtaining a basing/staging post or flying-over rights. Another advantage were the benefits from the balance of payments that could be used to offset the costs of having to station troops abroad (Stanley and Pearton, 1972:74–76).

For Pierre (1982:20–21), arms transferred to assist allies are often cloaked in the robe of establishing or perpetuating a regional balance of power, which is a relative concept as one state's balance may be another's imbalance. This is frequently threatened by the possibility of an indomitable arms race, which is also open to various and even contradictory interpretations. States usually aver the need to establish bases in the territory of the recipient for forward garrisoning and for installing intelligence gathering facilities. States also justify the sale of arms on the grounds that in most cases these have the potential of being tested by the recipients rather than the suppliers. Arms transfers are, however, not a zero-sum game as it is usually assumed, as the transfer of military capabilities can also benefit and harm the recipients' interests. The supply of arms can, on the one hand, be viewed as an implied commitment of friendship; an expression of privileged status; reverse leverage of the recipient; and the restoration of the morale of the armed forces (Catrina 1988:74–75). On the other hand, there are numerous costs for recipients that include the instigation of regional arms races; the loss of influence and leverage over the suppliers; surreptitiously implied identification with the supplier's policies; the influx of foreign personnel; environmentally inept equipment; and inter-arms-of-services contention (Catrina 1988:75).

Besides the numerous costs that a recipient state may find within an arms transfer relationship, there are also various military costs and political disadvantages that a supplier state may encounter in sending arms abroad. Pierre (1982:22–23) affirms that first amongst these is the problem of re-transfers of which supplier states have no control over as soon as they have been procured abroad. Lately, most arms transfers are conducted with a clause impeding the recipient from selling the arms purchased to a third party, or the manner in which these arms are going to be utilised, and this is usually done through the usage of end-user certificates. However, realistically this is a difficult goal to achieve, as there are no guarantees to the effect that the arms will not be re-transferred or used in inconsiderate circumstances. The second problem is the transfer of large consignments that results in the depletion of the supplier's own inventory and thereby reduce the armed forces' state of military preparedness. This is always a sore point between the military and political officials as the former are most concerned about the equipment and the military readiness of their own armed forces regardless of the political, particularly foreign policy related, consequences.

The third problem that Pierre (1982:23–24) advances relates to the political repercussions that are associated with the sale of arms to regimes that might be regarded as coarse, with the sudden changes in political or military bloc alignments that are often unpredictable and therefore hazardous. Finally, Pierre (1982:24) claims that the problem of transferring arms is that it has the potential of finally dragging the supplier state into war. If the antagonistic party that is presumed to be having more arms support from another parallel supplier, the possibilities for an indomitable arms race that requires political intervention and resolution is increasing. If the ally is in greater danger of being vanquished, the possibilities are greater that the supplier state might be dragged into the conflict since it can not allow its confederates to be subjugated. Other politico-military costs for suppliers, according to Catrina (1988:71–72), include the loss of flexibility in enduring arms transfers; opprobrious social outcomes; loss of dignity; technology transfers leading to diminished competence; the impact of exports on the designing and development of weapon systems; and ultimately industrial dependence.

4.3 POLITICO-DIPLOMATIC AND IDEOLOGICAL REASONS

4.3.1 The Political Significance of Arms Transfers

The political connotations that are unique to the arms trade as opposed to the trade in other commodities, according to Catrina (1988:12–13), are founded on several factors. Arms are commensurate with the objective of national and global security, which are the basic goals of all nation-states or state-nations. Furthermore, is the perceived utility that when they are being transferred they assume a more political than a mere military utility. Finally, their transfer could be a reflection of the global distribution of military capabilities, which have an extremely sensitive impact on the international balance of power. In short, the search for national security, which encompasses the pursuit of territorial integrity, sovereignty and political independence by all states and governments becomes a consequent relationship between the arms suppliers and the recipients, as the former produce the means for the pursuit of these objectives by the latter. Arms suppliers do not relinquish their national security or political independence by offering arms to the recipients, however, in the long- or medium-term, their failure to export arms may lead to the disintegration of their arms industries, and that might be perceived as rendering their national security vulnerable to threats.

The profound political significance that the arms production and transfer system has adorned since the Second World War, according to Stanley and Pearton (1972:6–7), has continued to ensure that the governments are deeply involved in the system. This is not a matter of choice or preference since the arms production and transfer system is rooted within the anarchic sovereign state global system, and as such, it can not be halted without impeding the other. With virtually all arms producing states, the condition for low cost indigenous production and procurement is almost entirely dependent upon the ability to export arms, which is an economic problem for the arms industry, and a political question for the state (Catrina, 1988:13). Actually, Stanley and Pearton (1972:7) aver that there were two ways in which arms transfers were utilised for political objectives in the Cold War era: firstly, as part of the conduct of foreign relations; and secondly, in the determination of the political orientation of a state by the preponderance of the type of weapons it possessed in its inventory. During this period, arms transfers played an integral part in the foreign relations of each and every supplier and recipient state. According to the late former president of

Tanzania, Julius Nyerere, the sale of arms became "a declaration of support – an implied alliance of a kind" (excerpted from Catrina, 1988:13).

4.3.2 Political and Diplomatic Incentives: Waging Politics with Arms Transfers

Arms transfers can also be used to obtain influence, beyond politico-strategic or military ambitions. In the Cold War era, the major arms suppliers had undisguised political purposes for arms transfers and these were steadfastly pursued in the ensuing competition for disciple states. Each of the leading supplier states, particularly the United States and the erstwhile Soviet Union, had to introduce new arms export inducements in order to prevent the target state from purchasing from the other supplier in what was labelled as "pre-emptive sales" (Stanley and Pearton, 1972:81–82). Pre-emptive selling refers to circumstances where an ally is involved in a crisis situation and the security position demands the supplier state to introduce improvements in its arms supplies in order to assuage the disparity created by potential or real arms imbalances favouring the adversary (Frank, 1969:176).

However, with regard to smaller suppliers, arms sales or grants did not have strong political influence motivations, albeit that does not mean that they were entirely lacking. "All arms-manufacturing countries will wish to be in good odour politically in countries where they have important economic interests – actual or potential – and supplying arms is judged a likely route to political favour" (Stanley and Pearton, 1972:83). The state's power, proficiencies, and centre of gravity in the international hierarchy of sovereignties, according to Lewis (1979:186), are dependent on its arms-supply endowments. Consequently, arms transfers create a relationship between both the supplier and the recipient, which is, however, precarious, as both parties anticipate to benefit from it in the form of leverage or influence for the supplier and the augmentation of the capabilities of the recipient. Arms transfers conducted in the pursuit of diplomatic goals cannot be disentangled from those in the pursuit of politico-strategic goals as the interests and motives are also indefinable. Nonetheless, the usually stated objective is the extension of support for the regime that is accorded arms or the denial of arms to an adversary of that regime.

This is the behaviour of both leading and emerging supplier states alike, and on the receiving end this gesture, particularly with the broadening of the supplier camp, has been exploited for the sake of maintaining strategic and diplomatic sovereignty (Kolodziej, 1979:12–13). The supplier's

leverage is reduced as the web of interdependence unfolds and influence becomes enervated as the recipient elects between it's own interests and those of the supplier. The final result is reverse leverage, whereby the supplier is compelled to assume a share of the regional or extra-regional responsibilities of the recipient, sometimes leading to compromising the original intentions of the supplier. Therefore, the foreign policy conduit of arms transfers results in several interactions between the suppliers and recipients that ultimately develop into mutual dependencies which help to shape their responses to local, regional, and international problems and crises. However, these mutual dependencies are not solid, as either party can elect to disengage from the relationship as soon as vulnerabilities to vital national interests are discovered (Lewis, 1979:186–187).

Krause (1992:15–16) insists that the global anarchic system, with its innate conflictive relations, compels states to pursue large-scale arms production to satisfy foreign policy requirements. The power of the state in pursuing these foreign policy requirements relies on military organisation whose adequacy is dependent and greatly affected by weapons technology. The possession of advanced technology by states is a pivotal component of the capabilities of a state in relation to other states, and thus serves to explain the role of large-scale arms production in the pursuit of power by states. Shifts in the distribution of capabilities are indicators of changes in the international system, and the possession of military technology reflects one of the basic capabilities of the state. States, therefore, in their pursuit of power, are incited to capture the processes of military production and innovation. The interests of the state, according to Buzan (1987:40), are primarily driven by political and secondarily by economic motivations. Two major political interests, which are adjuncts to the pursuit of autarky for the maintenance of basic security objectives, are the pursuit of power and influence. Influence and power in international relations *inter alia* requires the establishment or the existence of an arms industry, which ensures the demonstration of status as well as capability.

The pursuit of power is guaranteed with the existence of an arms industry as an exhibition of an independent capacity to wage war. An arms industry also provides an important tool for influence by ensuring that the supply of arms is used to gain leverage over, and therefore allegiance from, lesser powers, as the superpowers clearly demonstrated during the Cold War. Political goals can be served through arms supplies to allies, to gain new friends, or to oppose contrasting interests in a specified zone of influence (Buzan, 1987:40). In certain instances the justification of transferring arms is said to be the ability to gain access to both political and military leaders, which sometimes

begins with the training of the officer corps of the target state. The endeavour is usually based on "the possibility that the structure of the foreign army, its force levels, and its weapon systems will be shaped by the training programs and arms of the supplier country" (Kolodziej, 1979:13–14).

Pierre (1982:14–16) goes further by asserting that arms can also be used to invigorate alliance and treaty commitments, with the supplier state supporting its allies within the alliance or through the promotion of the obligations of a treaty that is in the supplier state's interests. This can also be done through the denial of the supply of arms to the adversaries of the allies or the opponents of those states expected to honour treaty obligations. The main political objective of this exercise is to obtain leverage and influence over the foreign policy decisions or orientations of other states, which, unfortunately, are fleeting phenomena as they can be forfeited much more expeditiously than they have been accomplished. The utilisation of armaments to achieve foreign policy objectives can be exaggerated, particularly their ability to cement relations between states, as this is an inefficient and risky exercise. The relationship can be ephemeral, especially when alternative suppliers are available to the recipient, and the consequent political costs become immense for the supplier. The recipient's acknowledgement of the dependency relationship implied in the conditions of a transaction may lead to repentance, thus resulting in a capricious relationship that restrains the activities of both parties (Pierre, 1982:18–19).

It is not, however, always the case that arms are a foreign policy instrument, especially for the secondary leading and emerging suppliers, perhaps with the exception of the so-called pariah states, whose exports are perceived to be a diplomatic opportunity within an antagonistic environment (Catrina, 1988:14–15). Only a few arms supplier states have the potential to use their arms exports as a primary part of their foreign policy. The situation with most governments of the secondary leading and emerging arms supplying states is that they have a limited effect on a global scale, particularly within a buyers' market, and consequently have to adapt their policies to become more commercially-orientated. This does not mean that secondary leading and emerging arms supplying states do not have to take political implications into consideration, as there is a difference between how they have to execute their arms transfer policies *vis-à-vis* the primary leading suppliers. The question for them is always negative, to wit, they have to indicate to what type of recipients they should not export armaments so as to avoid embarrassing situations. For the primary leading suppliers it is different, since they have to decide on political grounds which states shall receive weapons, all in the name of promoting their political aspirations.

Therefore, in the Cold War era, virtually all arms producing states were reputed to sell arms in order to extend and consolidate their influence over other states. This practice is still the same today, except in terms of the position of the relevant supplier state, whether it is a minor power, a middle power, or a leading power, in the international hierarchy of states. Klein (1980:145) maintains that leading powers have the means to exert influence of which the middle and minor powers are apparently denied. However, recipient states in a buyer' market are in a position of pitting the suppliers against each other and also to diversify their supply sources, thus alleviating their dependence on one supplier. Due to the vulnerability of arms industries to vacillations in foreign orders, recipients are presumed to dictate the terms of trade in the market. Furthermore, as a means to sustain their sovereignty, recipient states are likely to develop their own industries thus transcending into an area previously predominated by industrialised states. However, according to Pearson (1994:54), research revealed that arms transfers are not a reliable instrument for politico-strategic influence since they rarely evoke significant political concessions from the recipient. Nonetheless, on the one hand, short-term concessions are usually attained in the form of basing areas, but long-term goals, on the other hand, such as changes in the recipient's policies or influencing the regional balance of power, are not easily realised.

4.4 ECONOMIC REASONS

As an industrial process like all other production processes, arms production depends to a certain extent "on various inputs and factor endowments in an economy" (Krause, 1992:13). These include the standard of industrialisation, an appropriate infrastructure, advanced human resources, backward and forward connections with other sectors of the economic industry to provide raw materials, sub-contracting and marketing of spin-offs, a certain degree of state support and control, and the establishment of a market for the goods. These factors, as well as the political will in the pursuit of power, which initiated the establishment of an arms industry in the first place, determine the successes of the arms production and trade endeavour. Constraints on the production process are primarily determined by the economic factors, particularly the distribution of the factor endowments that dictates the process' geographical limitations. The state's ability to adapt to changes in the production process determines the process' long-term successes instead of the ability to copy-produce technology at its prevailing frontiers. The amalgamation of political and economic incentives prescribes the pace at which these processes are adopted.

4.4.1 Economic and Technological Incentives for Arms Transfers

The politico-strategic imperatives behind the pursuit of arms transfers are further redefined by economic and technological considerations. According to Kolodziej (1979:14–15), the main motives for exporting arms range from long and balanced runs through efficient series production to the ability to spread the costs of research, development and industrial production over a wide spectrum of production units. The major factor here is that the inability to attain a market window for the produced armaments will result in the state having to absorb all these costs and ultimately failing to meet other imperative social priorities. This pressure to sell arms can be construed to be the ability to use scarce resources efficiently and, as such, compels governments, regardless of ideological orientation, to respond in a specific manner, although taking into consideration the varying circumstances. Immediate amongst these circumstances are the availability and development of productive resources; the existence of national unanimity on the absorption of military costs as part of the social outlays; and finally, the extent of the arms production capability that has to be kept running for future utilisation.

The major problem often encountered is that arms manufacturers commonly consider arms like any other commodity, to have a market value and, as such, to be a potential reservoir of profit. Viewed from this dimension, arms production and sales, regardless of the losses incurred, are promoted as the solution, particularly for the perpetuation and advancement of the state's production capability (Kolodziej, 1979:15). Kolodziej (1979:16–17) stresses that a large "number of arms-production centers, joined to expand scientific and technological capabilities, accelerates the upward spiral of competitive lethality". The endeavour to maintain and advance scientific and technological discovery combined with the economics of arms production generates a synergistic effect that drives the qualitative and quantitative dilation of international production and transfer of armaments. The complex technological, scientific and economic processes that are a consequence, overcast by traditional security and political contests, become difficult to control, resulting in hitherto unforeseen arms races. Arms transfers, therefore, appear to be the obscure answer to the resolution of contradictions between politico-strategic and diplomatic requirements and the domestic socio-economic essentials (Kolodziej, 1979:15).

4.4.2 Technology and Human Resources: The Pursuit of Development

The transfer of technology is an important input into the process of development. This, combined with the flexibility that exists amongst the various sectors of the economy, insinuates that the socio-economic growth and development of a state is intensely influenced by the infusion of military as well as civilian technology (Neuman, 1979:226–227). According to Neuman (1979:227), those who deny this fact have to look at the scale of training, infrastructure construction, and industrial demand procreated by the inculcation of military technology. Moreover, its overtures ensure that new communities and eventually satellite cities are developed, particularly in remote areas, thus introducing the necessary amenities such as water, roads, electricity, communications, housing and ports, as well as the development of human resources. Furthermore, there are countless examples of the spin-offs from military technology into the civilian sectors that cannot be ruled out as part of inputs into the development process. The spin-offs in terms of skilled labour from the arms production process are enormous, but these are accompanied by political problems, particularly within constituencies where arms industries are located (Stanley and Pearton, 1972:132–133).

Arms industries are one of the effective instruments for overcoming problems of unemployment in depressed areas through sponsorship or the allocation of contracts. However, problems of flexibility are often encountered when a government-sponsored project is faced with financial difficulties or when skilled labour requires to be relocated. Currently, defence industries are less dependent on specific localities for their manufacturing processes and, in most instances, local communities are no longer dependent on them for employment opportunities. These industries rather encourage rigidity in terms of technical education, perceptions on social development, and the restraints they impose on diversity (Stanley and Pearton, 1972:132–134). Therefore, Neuman's (1979:228) study generated three important findings. Firstly, at a certain period of time socio-economic standards are mutated by the introduction of military technology. Secondly, the quality and quantity of equipment procured, determines the extent of technological spin-offs into the civilian sectors. Finally, the generation of skilled labour, infrastructure construction, and industrial productivity are the essential ingredients dictating the pace of socio-economic development.

4.4.3 Maintaining a Domestic Arms Industry

Primary among the characteristics of the current arms production and transfer system is the demand it imposes on funds that are embodied in costs for research, development and manufacturing. Regardless of these spiralling costs on the defence manufacturing industry, there has been less assured prospects for securing arms export orders. As more and more states develop the capacity to manufacture weapons, the numbers of suppliers increases, thus saturating the market and intensifying the extent of competition. Accordingly, the defence industry is embroiled in an inevitable dependency relationship with governments, as the latter provide the elementary funding for research and development for major projects, as well as endorse the creation and maintenance of domestic and external markets (Stanley and Pearton, 1972:5–6). As a result, most arms producing states are pressurised to export arms in order to compensate for the costs of production and also to be exposed to the ferocious competition in the market. Accordingly, they are introduced to the necessarily tenacious technological developments such that they can subsequently improve on their own technical faculties.

The state's competitive position is also perceived to be improved by the exportation of arms, particularly by advanced industries in terms of technological accomplishments. A higher value in terms of foreign exchange is presumably bestowed by sophisticated arms when compared to less advanced and unprocessed goods. Moreover, armaments are believed to ease the burden of paying for imports, for providing access to strategic resources, and for securing domestic employment and economic growth. "For developed economies", Kolodziej (1979:15–16) argues that "arms production and sales are seen as the advanced thrust of the civilian expansion of the nation's economy and as a means of keeping pace in the technological race and in the search for markets. For developing states, an armaments industry, like the aeronautics industry in Brazil, is considered a key component of a nation's economic and political modernization."

"Deprivation of the export market", according to Stanley and Pearton (1972:69), "would probably mean a slow death for any one of these companies as they are constituted at present." Arms industries in states with a large demand from their own armed forces, such as in the United States, are advantaged by the economies of scale that result from long production runs. This in turn means that their unit costs are desirably lower compared to their competitors in the arms market, especially with regard to sophisticated armaments. The withdrawal of such states from the international arms market will not be disastrous, but it would be economically rather uncomfortable for them. However, for those states that rely on exports for maintaining their arms industries, the denial of

exports would imperil their national security and "the social and economic consequences of such a withdrawal would hold out extreme hazards in domestic politics" (Stanley and Pearton, 1972:70–72).

Armaments are high value items and as a result they have a minor impact on altering the balance of payments. Stanley and Pearton (1972:124–125) argue that their national conversion ratio – goods that require a high proportion of national knowledge, skills and domestically produced materials – is very high and consequently their earning power is more than what numerical figures provide. Therefore, their innate high value and prominent conversion ratio makes them a tantalising commodity for export, primarily for attaining foreign exchange and subsequently advantaging the national coffers. Moreover, the export of advanced weapons necessitates the further sale of spare parts as well as the demand for accessory equipment, infrastructure, training and technicians. "It is therefore not surprising that weapons are one of the most buoyant items of international trade" (Stanley and Pearton, 1972:131).

What should be noted is that there is no substantial reciprocity between the state of balance of payments and the arms trade. This, according to Stanley and Pearton (1972:131–132), is apparent when the fluctuations in the balance of payments are observed: when they are in deficit trade does not regularly increase, or when they are in surplus it does not decrease. There are various factors that influence this state of affairs and these *inter alia* include the demand for armaments; the proclivity to protect or maintain earned markets; the long-time spans between orders; and the opportunistic allurement of prospective sales. Notwithstanding, the enticement to export arms is apparently urged by the balance of payments regardless of the efficacy of the effort.

4.4.4 The Logic towards Enlarging the Market

The process of arms production is supposed to be more exacting during all the phases, which invariably includes less tolerances as well as assiduous testing for reliability. Stanley and Pearton (1972:140–142) contend that the innate uncertainties tend to make the arms industry to be highly inflexible, particularly if the industry is not diversified to include civil production within the establishment. This allows overheads from military production to be diffused into civil production and also to equilibrate the workload within the establishment. Secondly, the costs have to be shouldered by governments as private manufacturers and financial institutions are virtually unable

to sustain the risks or to mobilise the resources required for the arms production process. Thirdly, the focus of arms production is not always to maximise but to optimise output. This is based on the logic and experience that arms production and transfer policy is always grounded on the same premises: that production which is focused on military priorities in order to determine the quantity and type of weapon systems required, is essentially a costly qualitative and quantitative exercise; and if production is focused on economic priorities, then few sophisticated weapon systems are produced, which is both a costly and complicated exercise.

Government and industry are compelled, in both instances, to increase output so as to compensate for the costs incurred and to hope for the amortisation of the costs through foreign sales. Contemporarily, with the increase in sophisticated weapon systems, the break-even point in arms production takes longer to reach, albeit it is usually compensated for by the learning curve (Stanley and Pearton, 1972:142–142). A continuous urge by non-producing states to procure weapon systems based on the right to defend themselves adds to the desire by arms producers to increase their arms sales and, therefore, the non-producing states will always uphold this right to their sovereignty, dignity, independence and equality (Buzan, 1987:41–42). This right ensures that the non-producing states do not become second-class states by not being able to match their forces with those of the arms producing states and thus being politically reduced to becoming states that fail to manage their own circumstances.

The maintenance and the augmentation of the arms trade is thus characterised by a strong community of interests between the suppliers and recipients, and this proclivity guarantees that arms transfers continue to be a central feature of international relations (Buzan, 1987:42). For the emerging suppliers, including most of the leading suppliers, the lengthening of the production runs is of crucial importance because the average price of each unit produced is permitted to fall as the costs of production are spread over a wider number of units. Secondly, if costs can be recouped from a longer run, then sales can be based on the marginal rather than the average cost, thus allowing greater flexibility to lower the price in order to capture the market. Finally, the learning curve has to be redrawn on each and every phase, and if the production run is interrupted, it becomes detrimental to the whole process thus the benefits are delayed (Stanley and Pearton, 1972:145–146).

It is therefore in the interests of both the manufacturers and governments to lengthen the production runs rather than to cancel a project. For emerging suppliers to be able to compete effectively in the arms market, wherein the type of weapon systems, the trends of arms production and transfers, as well as the environment for the types of weapons to be employed are determined by the leading suppliers, they have to offset the strains through efficient production that can be achieved by prolonging the production run, or through enlarging the arms market. Emerging suppliers as well as other leading producers, like those in Western Europe, have to co-operate, co-develop and co-produce as a way of enlarging the market. According to Stanley and Pearton (1972:146–147), "the logic of producing advanced weapons implies that the alternative to co-production is not national production, but no production at all".

4.4.5 Economic Benefits and Costs

From an economic perspective, Catrina (1988:71–72) maintains that arms transfers' benefits include the achievement of favourable balance of payments; the support of employment programmes; the maintenance of a sustainable defence production base; linkage of commercial sales to defence sales; as well as security in the supply of resources such as raw and strategic materials. Pearson (1994:37–38) also agrees that advanced defence technology has always ensured sustained exports, high employment levels and enduring profits, even during periods of economic recession, due to directed government research and development investments that ease the costs, the risks and constraints of production. The costs are lowered with longer production runs as processes are being mastered and as economies of scale are being established. Therefore, government guarantees to procure large numbers of equipment for their armed forces, widening export markets, and subsequent expanded production, reduces the costs of the unit produced and ensures dilated profits. Hence, government agencies play a major role to arrange and finance exports in order to sustain industrial employment and at the same time reduce the costs of the equipment required by the state's armed forces.

Cahn (1979:175–176) believes that there are at least three ways to measure the role of arms transfers in a state's economy: the relative importance of exports towards the gross national product (GNP); the arms exports versus the total exports ratio; and the arms exports contra the gross national product ratio. According to Cahn's inferences, arms exports are both important and encouraging to the arms producing states' defence production and economies, including those of the major arms producing states – although with regard to the latter, they have a relatively minute effect on total

economic performance. These benefits are also accompanied by costs, which include detrimental effects on development as a result of large financial resources absorbed by defence expenditure; re-transfers that impact on the suppliers' competence; and the subsequent impact of arms transfers on commodity prices (Catrina, 1988:72).

Pierre (1982:24) also affirms that the economic significance of arms transfers are not as remarkable as they are usually portrayed. According to Pierre (1982:24–26), case studies conducted in the past revealed that the economic benefits of arms transfers are less than what is commonly presumed. There were two inferences that could be deduced from the economic effects of arms transfers. Firstly, that arms exports usually constitute a minute fraction of the total exports for most arms producing states. Indeed, arguments against the justifications promoting arms sales maintain that the vindications based on the positive effects arms sales have on the balance-of-payments are pernicious because arms exports are a minor component of the total exports of leading arms suppliers. Moreover, these rationales are open-ended as they can defend any arms transaction. Furthermore, any export of a domestic product, be it civilian or military, provides the same benefits on the balance-of-trade (Cahn, 1979:176–177). Therefore, the effects of restraining the export of armaments would have a little impact on the economies of most of the arms producing states, with the exception of the regions and firms that are dependent on arms production (Pierre, 1982:24–25).

The second inference was that no arms producing state was less or more dependent than others on arms exports for enhancing its balance of payments (Pierre, 1982:26–27). Often the justification is that arms sales stimulate commercial transactions (Cahn, 1979:177). However, according to the data on total exports of the major western states, this allegation is nullified, since there is no evidence suggesting or indicating that a recipient state's procurement of a specific supplier's weapon system automatically led to the extension of trade relations. On the contrary, trade relations might have existed between the supplier and the recipient prior to an arms transfer relationship or that a dependency relationship was a consequence of an arms transaction due to other arrangements that were part and parcel of the whole package, such as spare parts, components, sub-systems, training and maintenance. It is usually the tendency of the authorities of the respective supplier states to justify their arms sales on the basis that one of the economic benefits of arms transfers is the opening up of civilian markets.

Another argument for arms sales is that they ensure collaboration amongst allies. It is true that co-operative research and development reduces the costs by avoiding duplication, by encouraging longer production runs, and by ensuring a relatively reliable and expansive market. Nevertheless, there are impediments too, in terms of the costs commensurate with the politico-strategic and economic complications of co-ordination and the absence of competition (Cahn, 1979:177–178). Therefore, arms transfers are a means of maintaining viable national defence industries that are connected to images of independence, sovereignty and prestige, which are, nonetheless, political enterprises (Pierre, 1982:27).

Regarding employment, Cahn (1979:179–180) argues that the defence industry employs between one and one-and-a-half percent of the working population in virtually all the arms producing states. The main power of this industry is located in the fact that it is partly or wholly government owned in most of these states, and if not, the government has a vested politico-strategic interest in it. The decisions that governments adopt that might have an adverse effect on the industry are reflected directly, unequivocally, and consequently politically, on the respective governments. The major factor of employment is further impounded by the fact that the more sophisticated the equipment the industry produces, the more capital-intensive it becomes, particularly when compared to other forms of public enterprise. Therefore, the labour force employed in the defence industry has to be disproportionately highly trained and skilled.

According to Catrina (1988:75–76), the main benefit of arms transfers is the transfer of technology that may benefit an indigenous arms industry or may have civilian application also. Other benefits are the offset arrangements that tend to have a positive impact on the recipient state's economy if they are sustainable, and if not, they become a sheer reduction of the cost of the procured equipment. Costs are usually manifested in the drain they cause on financial resources, regardless of the terms of contract, as weapon systems also require infrastructure, consumables and maintenance. Moreover, the domestic industry may be compelled to be re-orientated towards defence production at the expense of civilian production, particularly within states with an inchoate industry.

With regard to the balance-of-payments considerations, Cahn (1979:175–176) assumes that short-term advantages can be accumulated as a result of increased sales, but these are counteracted by foreign exchange constraints that most would-be recipients encounter. Recipient states would rather

purchase capital equipment and other non-military commodities from the supplier state with the meagre foreign exchange funds than armaments procured through offset arrangements. On a long-term basis, arms sales increases would confer an exchange rate appreciation that could strengthen the supplier state's currency, but at the same time causing a decline in the export of non-military commodities. The result would be a decline in employment in the civilian sectors of the economy. Therefore, an adequately performing economy would achieve the same employment levels, with or without increased arms sales. The only difference will be that the different sectors of the economy, the civilian and defence sectors, will be dissimilarly affected.

In short, there are definitely negative spin-offs on society from the introduction of military technology, on the one hand, depending on the type and quantity of equipment received. These, amongst others, include the drain on sparse human and natural resources, the disruption of civilian amenities, as well as the strain on the infrastructure and communications facilities (Neuman, 1979:235–236). On the other hand, no matter how gloomy the economic picture of arms transfers can be painted, Cahn (1979:180) declares that there are, of course, economic benefits and causes of prospective savings that can be identified. These include the restoration of research and development outlays, the accomplishment of economies of scale accompanied by the effects of the learning curve, the reduction of overheads, and the stabilisation of the production-line if it is not affected by cessation and the consequent start-up costs.

Therefore, *prima facie*, the benefits of arms transfers may appear to be massive on the entire economy, particularly with regard to the creation of wealth, the generation of employment, and the positive effect they might have on the balance of payments. However, most evidence denotes that such benefits are not that significant, especially for states that are heavily dependent on domestic demand for armaments. Indeed, there might be negative implications on employment and trivial consequences on the balance of payments, but on the surface, benefits can only be evident if concessionary arrangements are not inherent in the contracts, as they tend to diminish the benefits of arms transfers (Krause, 1992:108–110). Therefore, the macro-economic benefits of arms exports are relatively minor even though the overall impact of arms production on the economy may be consequential, and as such, arms transfers are fundamentally subordinated to the pursuit of power considerations.

4.5 OBJECTIVES COMPARED

As it has been observed, the three important concerns, wealth, power and war, which are also sets of forces for change in international relations, are intersected by the system of arms transfers (Krause, 1992:2–3). Wealth, on the one hand, refers to those economic forces that shape the manufacturing and dispensary of goods between and within states. To a certain extent, arms production and trade is vulnerable to the same pressures and dynamics that affect the production and distribution of other commodities. On the other hand, the pursuit of power by states and groups often compels them to change their positions within the arms transfers system, thus reflecting changes in the hierarchy of power within the international system, since preponderance within the system is partly determined by the state's ability to seize the process of defence innovation and production. As another dimension, the pursuit of victory in war is usually a facilitator of drastic changes in military innovation and production and, moreover, it has a significant influence on the society within which new military technologies are introduced.

According to Krause (1992:2–4), the motor of technological change is primarily the motive force driving the life cycle of the arms production and transfer system. The location of the state within this cycle along with the progress of the cycle *per se*, decisively determine the options that states have in terms of using arms transfers as instruments of influence. It is important to understand the manner in which the structure limits and provides opportunities to the options available to the actors, as well as the impact of past constraints to recent trends, rather than to focus on the mentioned schemes of the policy-makers. There is a common acknowledgement amongst all states that arms transfers have both political and economic advantages and drawbacks, along with implications of security and insecurity for themselves and other actors. Within the domain of global security, arms transfers have become a tool of government diplomacy, indeed a notable diplomatic tool, increasingly "valuable than ties of history, or culture, or treaty, or even of investment and non-military trade" (Stanley and Pearton, 1972:8–9).

4.5.1 The Arms Makers and Suppliers

The Stockholm International Peace Research Institute (SIPRI) provides a typology consisting of three tiers of suppliers according to their different patterns of behaviour and policy orientations (Harkavy, 1975:97–98). Firstly, it is the hegemonic pattern of supply, whereby major suppliers use

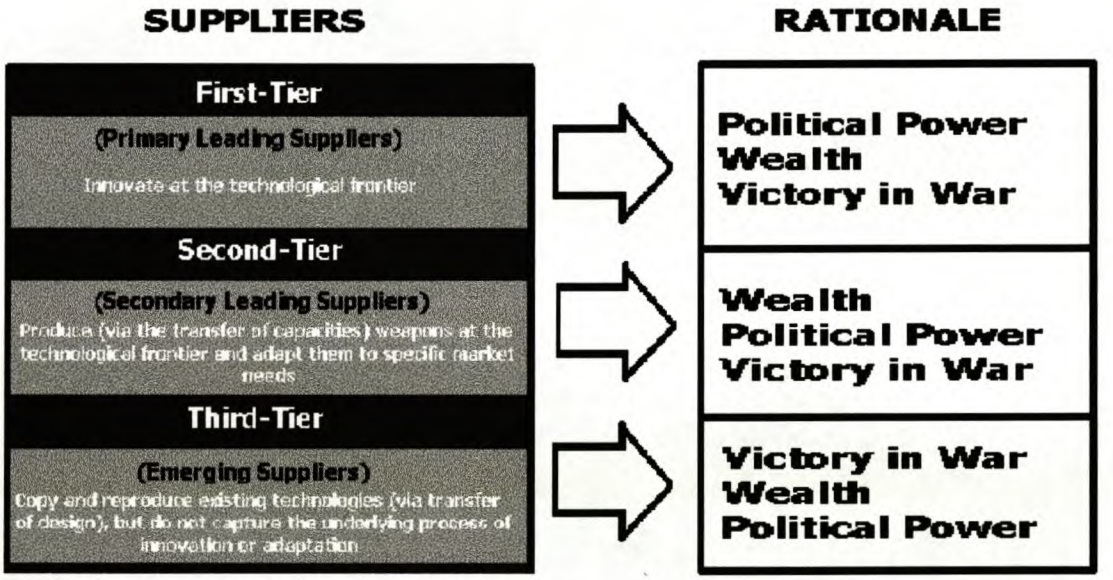
arms transfers in a comprehensive endeavour to obtain or preserve spheres of influence, thus arms transfers become instruments for politico-strategic purposes. Secondly, it is an industrial pattern of supply, wherein the intention is to preserve an advanced arms industry by achieving economies of scale through far-reaching exports. Within this pattern of supply, in its purest form, arms are exported indiscriminately to those who have the ability to pay. However, in reality, most suppliers are bound to follow this pattern of supply, although not in its purest form, due to politico-strategic considerations. The final pattern of supply is the restrictive one, whereby supplier self-imposed restrictions are implemented as they pertain to states that are reputed to be directly or indirectly involved in internal, regional or global conflict. With the last pattern, supplier states vouch to export arms where they are not to be obnoxiously used, but are procured for deterrence, prestige and exhibition.

However, Krause (1992:98) provides another typology similar to the SIPRI version, but goes further to uncover the variation in the motives of the various suppliers according to the tier to which they belong. This typology provides a classic method of determining the location of a supplier in the hierarchy of the arms production and transfer system (see Figure 4.1 below). The primary leading suppliers, in the first-tier, are presumed to be relatively obdurate to economic factors and unperturbed by the pursuit of victory in war, as they are technologically preponderant and huge in size, therefore are focused on the pursuit of political power in their arms production and transfers. Secondary leading producers and suppliers in the second-tier are compelled to follow the pursuit of wealth because they are driven to follow the technological lead of the first-tier states (Krause, 1992:98). For the primary leading arms supplier states the main purpose of transferring arms is to fulfil the ends of foreign policy, with economic benefits assuming a secondary rank, which is vice versa for the secondary leading suppliers in the second-tier (Catrina, 1988:70). Finally, third-tier emerging supplier states are assumed to follow the pursuit of victory in war, or the pursuit of security, as they are technologically inferior and vulnerable (Krause, 1992:98). For the emerging suppliers it is presumed that arms transfers are primarily an instrument of maintaining and expanding a viable defence industry and also an integral part of international trade (Catrina, 1988:70).

The central assertion here is that the "interaction of these different motivations after a period of revolutionary technological innovation directs the evolution of the global arms transfer and production system and helps explain the rapid diffusion of new military technologies, as states

attempt to assert their status and independence in the international political hierarchy" (Krause, 1992:98). Nevertheless, for all the arms supplying states, regardless of rank in the arms production and transfer system, arms transfers involve both political and economic considerations, and thus they also serve political goals by virtue of intending to maintain a sustainable arms industry. In this sense economic means are used to serve political ends, or in other words, economic sustainability is "not an end in itself but a means to achieve maximum self-sufficiency in arms procurement" (Catrina, 1988:70).

Figure 4.1 **OBJECTIVES COMPARED**



Adapted from Keith Krause (1992:98)

Although British, French and German views tend to stress the economic benefits of arms exports (Cahn, 1979:181), it is the usual assertion by those states to use arms supplies for commercial reasons and that they are apathetic about influencing the recipient's inclination, identity or political allegiances. They often argue that they are only concerned with the profits they gain from arms exports, which ensure employment and longer production runs. The client's ability to pay and credit ratings are presumed to be the primary factors for a transaction to take place, even if the recipients are opposing belligerents in the same conflict. This is the common argument often advocated by the

secondary leading suppliers that they use arms exports to compensate for their limited domestic arms markets because their military establishments are relatively small to maintain their arms industries "warm or operational" (Pearson, 1994:54–55).

However, the benefits are more substantial than they appear to be in pure economic terms. For the British, the French and the Germans, arms transfers are vital for the enduring activity of the national defence production lines, which is innately entangled in the pursuit of political independence and prestige within the anarchical global system of sovereignties (Cahn, 1979:182). For these states arms industries are strategically significant for future security considerations, which means that commercial incentives are combined with politico-strategic reasons for arms transfers (Pearson, 1994:55). There is also a perceived connection between technological advancement and medium- to long-term industrial growth, through direct links, spin-offs, as well as linkages with other sectors of the economy (Cahn, 1979:182).

The Japanese, for example, are of the opinion that their modest defence expenditures are a major contributing factor to their exceptional economic expansion "by freeing resources for industrial investment that would otherwise have been spent on the armed forces" (Cahn, 1979:181–182). The deduction could be made that there are no purely politico-strategic or economic reasons for arms transfers, except perhaps for hegemonic powers or certain firms and arms dealers (overt and covert) respectively. Therefore, the economic significance of arms exports is substantiated within the individual defence sector or specific firms that are reliant on arms production. Although there are apparent economic deliberations on the role that arms transfers play within and between states that should always be considered they are nonetheless of a minor significance relative to political considerations. "The international trade in arms has become such a prevalent implement of foreign policy for many countries, both recipients and suppliers, that economic criteria are subordinated to political considerations" (Cahn, 1979:182).

The economic environment of arms transfers has a very special nature as all governments, regardless of political ideology, have vested interests in the type, quantity, quality and destination of the arms produced within their territories. These interests compel governments to subsidise and control the process of arms production and marketing, particularly as most arms industries are inclined to be allured by their specific government contracts. This also makes arms a unique part of international trade and commerce as a result of their lethality and, as such, they can be used to inflict

damage on specific political, economic, individual and group human interests. Arms are also simple commodities like other merchandise as their value is determined by market forces and influenced by subsidies. Therefore, "in international relations weapons are both an instrument of power and an object of wealth" (Pearson, 1994:40–42). Hence, the definition of state policies towards arms transfers, according to Krause (1992:14), is dependent on political factors as well as prevalent economic and political beliefs.

Pearson (1994:29–30) maintains that arms exports are actually sales of surplus production in order to amortise future production. In most cases countries that consumed large portions of their revenues on defence, particularly on arms production and imports, were those that possessed relatively larger revenues than others, or those that had ambitious military build-up projects, some even including nuclear military technology. The prevalent general pattern for arms procurement included motives of military growth and effort, as well as an incessant possibility for international conflict instead of involvement in any particular war. Military autarky, in the antiquated mercantilist sense, according to Krause (1992:14–15), would presume that armaments should not be transferred to any other party, except solely for political reasons, resulting in direct interference into the general flow of arms transfers.

Within the *laissez-faire* school of thought, trade in arms will be perceived to provide wealth and power, and as a result generate sustainable growth and development, and, therefore, require less or no interference at all. This becomes the basis for indirect political interference into arms transfers that may also result in the reduction of objections to trade in technology, whilst the fountains of technology are not threatened. If they become threatened, then the possibility of a neo-mercantilist revival is inevitable with the consequent concerns over the role of arms transfers in technological diffusion (Krause, 1992:15). Therefore the motive behind the voracious arms acquisition programmes becomes an admixture of military ambitions, threat perceptions and greater economic wealth (Pearson, 1994:30). However, other perceptions such as cultural, historical, emotional, or ideological views on domestic or foreign security threats have an influence too on the entire military build-up projects.

For Pearson (1994:46–47), a state bent towards military autarky, particularly in the field of sophisticated armaments, has to adjust its requirements to the demands of the market, to wit, to produce arms that will fascinate foreign buyers so as to achieve longer production runs and

economies of scale that will reduce the costs of production. Therefore, a combination of both military and economic concerns is required in domestic arms production that ultimately has to be dictated upon by the global arms market. Furthermore, these ambitious developments can become counterproductive as they might fuel the "armament adequacy dilemma" (security dilemma) by forcing neighbouring states that might perceive them to be threatening to elect to do the same, thus extending the arms dynamic to become an expensive arms racing endeavour (Pearson, 1994:47). When viewed from another angle, military autarky may perpetuate employment as well as reflect common commitments within a state that are rooted in the distrust of foreign interference.

According to theory, suppliers motivated by politico-strategic impetuses are anticipated to be more self-sufficient and manipulative in their arms transfers than suppliers urged by commercial reasons. However, in reality all states have an interest in regulating their arms exports to keep track of their flow, utilisation, and related technological secrets, particularly with regard to their end-users. Notwithstanding, practice has proven that end-use controls did not succeed even for primary leading suppliers like the United States or the erstwhile Soviet Union. States and belligerent groups will always struggle to obtain state-of-the-art equipment as this has "a certain market appeal": the idea being that forces armed with the most pernicious weapons will not be easily challenged (Pearson, 1994:55).

According to Kolodziej (1979:17), "viewed apart from these (political, strategic, economic and technological) drives and incentives and the resulting intricate web of reciprocally reinforcing supplier-recipient relations that give them expression, arms sales as a political problem make little sense. They are more the result than the cause or the condition of growing supplier-recipient interdependencies, which are driven, paradoxically, by a penchant of each state to maximize its independence in all significant areas of national activity. They are the product of the instruments of modernization that are attributes of advanced, national political structures and have roots that go deep into the psyche and dynamics of the nation-state".

In most instances, the benefits that are attributed to arms transfers are a mélange of beliefs or speculations about their significance, which is not necessarily a reflection of their accomplishments. Both economic and politico-strategic considerations are essential in terms of dictating the exigency and the orientation of arms exports respectively. Arms transfers and procurements are mainly stimulated by the need to maintain national security for all the states, with economic benefits being a

by-product, which is, more often than not, counterbalanced by monetary costs. Therefore, according to Catrina (1988:73–76), arms transfers are nothing more than politico-strategic benefits that are accompanied by economic deprivation.

4.5.2 The Politico-Strategic and Welfare Imperatives

Most economic analysts are of the opinion that defence expenditures are innately dissipative and willy-nilly an inevitable calamity for every country's economy. The analogy mostly followed is the one of the "guns vs. butter" debate, which utilises the "economic context of scarcity of resources and opportunity costs" (Neuman, 1979:220–221). What is meant here is that scarce resources are being misused with the procurement of armaments, which could be used towards economic growth and development. This point of view represents a zero-sum relationship between defence expenditure and economic development. Moreover, even military assistance programmes are viewed as a lavish exercise, because they require the building of infrastructure, the diversion of skilled labour from civil production, including the expending of funds that were initially allocated for other purposes into the maintenance and operation costs of defence programmes. The spin-off effects of these projects are denigrated to be unproductive when compared to direct investment in development; and the results of arms procurement, it is averred, are arms races negatively affecting regional co-operation, growth and development.

On the other hand, there is the school of thought, although minute in size, which maintains that there are positive developmental effects, brought about by arms production and transfers. This school enumerates the long-term dynamic possibilities that arms transfers may have on industrial development, on improving technical propensities, and on procreating stability rather than war (Neuman, 1979:221). Actually, according to this school of thought, arms interests are double pronged: they are firstly related to politico-strategic interests and secondly to the creation of wealth, profits and employment, thus ensuring the welfare of the state. However, domestic and international pressures interfere with these interests in the form of security threats emanating from hostile groups or states, or global economic and environmental tendencies. Moreover, the dearth of technologies for arms production makes it difficult to procure them from one reliable source, and therefore political officials are inclined to opt for independent indigenous production. This, according to Pearson (1994:44), is rooted on the belief (based on history) that military autarky reduces the state's vulnerability to foreign impediments and manipulations.

Military autarky is a tremendously expensive endeavour if challenges of licensed-production are taken into consideration, along with the difficulties of researching, designing and producing equipment at a recognised standard of sophistication. These processes require stupendous investments that very few states can afford, hence even more developed states elect to enter into joint-development, production and marketing. However, joint-development, production and marketing, on the one hand, can, even under the conditions of competition, procreate reciprocal benefits that might reduce antipathy. While, on the other hand, as a result of the conditions of international anarchy, security threats may become pronounced and ultimately degenerate into conflict, thus compelling states to shield their own secrets and subsequently interfere with the whole process of joint-enterprise (Pearson, 1994:44–45).

In the developing Third World countries, leaders often do not demarcate between the objectives of national security and the ambitions of national development. These are not considered to be mutually exclusive, but are perceived as intertwined policy goals towards addressing commensurate, indeed concurrent, political exigencies. Threats to national security by neighbours or insurgent groups are viewed as being antagonistic to the development project, and as such, investments in security and defence are considered to be compatible to the whole development agenda, "as insurance safeguarding the nation's independence, wealth, and development" (Neuman, 1979:228–230).

Thus, security is not regarded as antithetic to development, but as its prerequisite. Both security and development are regarded to be the imperative national priorities that all states internationally are obsessed with (Neuman, 1979:230). From this basis, therefore, it can be inferred that the transfer of armaments as a means for ensuring the security of each and every state will endure the existence of an anarchical sovereign state system. In addition, the contemporary interdependent environment wherein military technology is an essential factor in the economies of many states, there will be a lasting demand for the utilisation of this technology for development and security purposes. This manifests itself in the evolution of the theories of development, international security, and strategic studies, as well as in the practical contemplation and arrangements for security and stability in all the regions globally.

4.5.3 Trends of the Current Arms Production and Transfer System

From the 1960s to 1988, there was an enormous increase in arms transfers that can be explained by the post-war rearmament drive and the Second World War technological advance that impelled most states to upgrade their armed forces. Moreover, the three tiers of the system came forth during this time as a result of unanticipated and radical global developments. Within this stratification there existed a clear qualitative rift between the three tiers, reflecting disparate motivations, policies and industrial arrangements (Krause, 1992:85). During the same period, Krause (1992:88) notes that the market shares of the three tiers remained relatively stable. This was due to the decline in the shares of the primary leading suppliers, the United States and the former Soviet Union. Moreover, both primary leading suppliers still maintained the locus of technological innovation. What is more important, according to Krause (1992:85), is that although the focus is still on the arms trade between states, it would be a fatuous blunder for analysts to overlook domestic procurement or to perceive interstate transfers to be synonymous to the arms market, particularly if the huge domestic requirements of the United States, the erstwhile Soviet Union, India and the PRC are taken into consideration.

This trend, Krause (1992:92–97) argues, was illustrated in the period from the end of the Second World War to the late 1980s, when export market shares of the United States and the Soviet Union, in percentage terms *vis-à-vis* their total arms production, were lower than those of the other suppliers, whose export shares inclined to be higher than their global arms production shares. This denoted the lack of impact by major shifts in the global arms market on the overall hierarchy of arms production shares. Moreover, the hierarchy of ranking among either developing or industrialised suppliers may have appeared to be common, however, it did not connote an alteration in the stratification of the arms production and transfer system. This insinuated that shifts in interstate arms trade were not synonymous with structural changes in the international arms market, and therefore it provided a clear backdrop of the export policies of the participants. Nonetheless, the arms producers still remain stratified according to the hierarchy that is generated by the process of technological advance and this, in turn, still ensures that only a few states remain as primary leading producers. Other producers will continuously confront the challenge of having their products competing against an ever-rising level of technological sophistication in as far as their military utility and market values are concerned (Buzan, 1987:50–51).

As the trend of the diffusion of military technology is bound to continue into the future, the sources of armaments, particularly secondary leading producers are forecasted to increase (Buzan, 1987:50). These suppliers, however, appear to be clogged by various factors that could hinder their further development. These factors include the fact that they are compelled to forfeit their lead in technological advancement by having to export their know-how through co-production and licensed production arrangements. They are currently bound to establish co-ordinated production arrangements to meet the escalating costs of research and development as well as to develop new weapons generations, and they have to co-operate to enable an efficacious mobilisation of resources (Krause, 1992:87–88). This, according to Buzan (1987:50), makes the arms trade to reflect a combination of transfer of technological capabilities and off-the-shelf weapon systems. Nevertheless, these producers still have a comparative advantage as they produce high volumes of a wide range of weaponry at a reduced cost, and they also provide "technical assistance, financial credits, and the guarantee of weapons battle tested or at least fully evaluated by their own armed forces" (Pearson, 1994:21).

The technological gap that used to exist between armaments procured by the arms producing states' own armed forces and those that are exported to other states has been constricted or is no longer extant. In the past, state-of-the-art weapon systems were only transferred to close allies and friends, and other recipients, as a rule, used to receive older technology, mostly used and surplus armaments. The recipients willy-nilly accepted these weapon systems presumably because they were offered at less cost or because the recipients lacked the political clout or the financial thrust to demand more sophisticated systems (Catrina, 1988:27–28). In fact, during the Cold War period most of the Third World states became heavily dependent on a single major power for arms supplies, whereas contemporarily, arms are being purchased from a variety of sources regardless of ideological or alliance connections. This, however, does not mean that there are no longer deals conducted along ideological or alliance proclivities, as Israel and Syria still demand large quantities of their military equipment for both political and economic reasons from their Cold War inherited sources (Pearson, 1994:20–21).

Emerging suppliers in the third-tier were also compelled to remain dependent on the primary and the secondary leading suppliers for some of their inputs, as tangibly self-reliant and technologically advanced defence industries did not exist outside of these tiers. This was further strengthened by the reality that emerging suppliers were not as yet industrially prepared or in a position to advance

to the technological frontier to become secondary leading suppliers in the second-tier (Krause, 1992:88). Most of the emerging arms suppliers, such as Sweden, Brazil, Israel, South Korea, South Africa and India, to mention just a few, are ambitious to become regionally influential and preponderant powers and hence weapons are a guarantee for such purposes within an unpredictable environment. Although, at present, economic productivity is perceived to be the important indicator of world power, Pearson (1994:49) argues that within the modern world the mix and types of weapons possessed by any individual state are still regarded as the key to great power status.

The ability to produce and market arms is, according to Pearson (1994:49–50), also viewed as an economic necessity that is also profitable. Militarisation in the present context is more capital-intensive than labour-intensive, and therefore largely reflects dependency relationships. States are now compelled to rely on high technology in trying to maintain the military *status quo* and as a result perpetuate the global arms trade, which has become an expensive and lucrative business. This situation makes it difficult for those states with meagre resources to afford the latest or high technology equipment. Nevertheless, for all states' military and political leaders, weapons are a symbol of prestige in terms of advanced technological capabilities, but they also procreate a general dread for warfare, especially when their focus is on securing a weapon system in which a large amount of money was invested.

Current transfers are predominantly characterised by top-of-the-range weapon systems, sometimes these include systems that have been newly introduced into the supplier state's own armed forces or even hardly introduced at all. According to Catrina (1988:28–29), this change in arms transfers has two contrasting effects. For the recipients it means an increased global redistribution of military capabilities, thus offsetting the benefits to smaller powers. In contrast, it means that more sophisticated weapons will require more technical support, and at the same time increase the rate of attrition in the battlefield. The dependency of the recipients on suppliers for technical support, for re-supply of spare parts, components and more systems will increase, and consequently this could elevate the suppliers' control over the resolution of a conflict. The reason for this is the growth in the demand for high-technology armaments, which leads cash-strapped governments to employ diversification strategies by acquiring weapons and components from a variety of sources.

Governments also adopt makeshift designs and add-ons for the upgrading of their equipment to imitate leading weapons producing countries' inventories at lower cost. This trend may result in the

purchasing of intellectual property rather than hardware in future (Pearson, 1994:23–25). Nevertheless, only a few states can afford to obtain the latest technological equipment, and as such, most states are focussing on improving their anti-tank and air-defence capabilities, as well as striving for advanced guided missile systems. This trend is accompanied by an effort from most states to acquire more sophistication than quantity for their armed forces and this includes the capabilities to manufacture various types of ballistic missiles.

The implication therefore is that the arms trafficking paradigm of the Cold War became depleted with the demise of the former Soviet Union and the subsequent emergence of its successor, Russia (Klare, 1996:858–859). Russia began to witness a massive drop in its arms export orders from approximately US$18 billion (in constant 1993 dollars) per year in the late 1980s to approximately US$3 billion in the early 1990s. A second excruciating factor was that there was a sharp decline in the procurement of major weapon systems like tanks, combat aircraft, artillery pieces and warships and this resulted in a huge drop in total global arms transfers (Klare, 1996:859). For instance, after the Gulf War, the demand pressure for arms mounted, albeit below the peak years of the 1980s, due to global economic problems. Moreover, a political predicament of choosing between spending meagre revenues on arms or on consumer goods confronted many governments, especially those faced with foreign or domestic security threats. Most of the leading arms purchasers of the 1980s reduced their arms procurement programmes as a result of economic uncertainties, budget reductions, embargoes and boycotts, as well as shifts in world policies towards co-operative and collective security arrangements (Pearson, 1994:19–20).

Furthermore, the demand for arms was affected by most countries' intentions to become self-reliant through the establishment of their own arms industries, and, at the least producing key equipment and parts. Such self-reliance programmes were mainly induced by arms embargoes compelling states such as Israel, Argentina, South Africa, Chile, and India, to establish indigenous arms industries, albeit not insinuating total independence from key weapons and component imports from the leading producers (Pearson, 1994:20). Accordingly, "the arms trade has not simply evolved into a smaller version of its old self, but has changed into something new, producing a new paradigm of arms trafficking" (Klare, 1996:859). This new paradigm is not clearly defined as the Cold War paradigm, albeit its essential features and trends are unveiling.

These trends include: the indisputable preponderance of the United States in the international arms market; the centrality of economic, as opposed to politico-ideological rather than the politico-strategic, reasons for arms transfers; the emergence of a new arms dynamic in the Asia-Pacific region as well as the augmentation of extant markets in other regions; and a change in defence focus from external to internal considerations in the selection of armaments (Klare, 1996:859). Actually, the admixture of regional conflict and the availability of funds to purchase arms continuously fuel the global arms trade. However, the alleviation of some of the conflicts that were motivated by Cold War antagonisms, the gratification of weapon requirements for most states, and the omnipresent world economic recession, continue to reduce the demand for armaments. Cuts in arms production and exports resulted in budgetary deficits and slack import demand for most arms supplying states (Pearson, 1994:13–14). Nonetheless, other states, confronted by large arms stockpiles and problems of unemployment, viewed the arms trade optimistically and thereby provided the market with competitive products at bargain prices, thus resulting in cash sales.

Another important trend has been the advent and prominence of other non-state actors such as sectarian forces, insurgent groups, as well as grey- and black-market dealers in the arms transfer system (Klare, 1996:859). Pearson (1994:60–61) also concurs that arms are not always procured through legitimate government or industry channels, as they offer a lucrative business for smugglers and a variety of groups or covert government agencies that are involved in secret deals. Grey markets connote government-approved deals that avoid legal channels or evade internationally agreed restraints or embargoes, sometimes using third parties for the shipment of secret armaments. The black market refers to a process in which private arms dealers and smugglers process illegal arms shipments in small packages in order to avoid detection by government agencies. The black market becomes more effective when components are being dispatched, as these are usually dual-use components that are not restricted by law. In most cases, such illicit deals are often employed under war conditions since the pressure to process them is usually activated by immediate war requirements and thus represent a great challenge to governments because they often happen without official sanction and could provide fuel to conflict situations.

Other trends include the inability of Russia to compete effectively in the arms market because that it does not possess the resources to subsidise its arms shipments to its allies abroad. The collapse of the Warsaw Treaty Organisation resulted in Russia's former allies like Poland, the Czech Republic, Hungary and Romania seeking to procure military systems from the West and also soliciting to join

NATO (Klare, 1996:859). During the Cold War period, Poland and the former Czechoslovakia (the current Czech and Slovak Republics) had defence industries that had been built even before 1945, and thus had the experience and skills to occupy secondary leading supplier status in the second-tier. However, their production and exports were not freely determined, as they had to conform to CMEA (Community for Mutual Economic Assistance) economic planning and the Warsaw Pact's military and security policies. Up until the demise of the Eastern Bloc, the industries of Central and Eastern Europe were "integrated extensions" of the Soviet Union's defence industry and these states were used as channels for its arms transfers (Krause, 1992:87). Nevertheless, these states, especially the Czech Republic and Poland, continue to produce various sophisticated weapon systems and are involved in joint-development and production projects with several leading suppliers. Currently, they occupy the position of primary emerging suppliers, along with Sweden, Canada, Italy, Belgium and the Netherlands, within the hierarchy of the arms production and transfer system.

Harkavy (1994:23) provides a checklist to understand the "shape of the future", which he claims appears germane to the analysis of the arms trade. This includes a decline in defence spending by the great powers and an increase by the small powers; a co-ordinated effort by the extant nuclear powers to stop further proliferation – which will be a further attempt at collective security, with the primary focus on the weapons of mass destruction. There are further attempts at augmenting the role of the United Nations, together with the use of international law. Economic imperatives are currently vying with politico-strategic considerations for importance within an imminent three-bloc competition, wherein Europe, besides the United States and Japan, might become the world's powerhouse. The PRC may become a challenge to international stability as the importance of Asia in the world continues to increase steadily, and if security concerns continue to decline in importance. The United States' bargaining power in Asia is consistently decreasing, even as it needs Asia as a source of capital. There is also an evolving struggle between finance and trade, as the former is increasingly globalised, and the latter is becoming more regionalised, whilst the ability of the state to control economic activity at the national level seems to be declining. The presence of the United States is being discerned in every region of the world, although it is becoming decreasingly preponderant, as it's moment as the only superpower will be very brief. Power will continue to be more evenly distributed as the United States' military dominance recedes and as other states' economic achievements improve.

Some of these trends, Harkavy (1994:23) maintains, are already visible in the new world order, however, it remains to be seen whether they do have an impact on the structure of the arms production and transfer system or not. Since the legacy of the Gulf War and the period of economic difficulties is determining the type, quality and quantity of weaponry that can be expected in the future, Pearson (1994:99–102) believes that efforts are currently towards developing a next generation of sophisticated computers, stealth and electronically controlled armaments. These armaments are intended to increase firepower and simultaneously reduce vulnerability towards their human operators.

Efforts are also focussed on employing technologies that are effective in other weapon systems into other systems, like the utilisation of stealth technology, which was is on aircraft, on naval vessels. The overall intentions are to ensure that the "enemy" suffers more casualties than "own forces"; personnel costs are reduced; and to keep advanced defence industries are kept warm, presumably at higher levels of productivity. Civilian advanced technology and the costs incurred are also going to be influential in determining the types of next generation weapons, while simultaneously problems of military security will be encountered in having to export these weapons abroad into the arms market. Pearson (1994:102) suggests that one of the solutions could be to design and test the next generation of weapons in the laboratory by using simulators or a few prototypes, then create a few copies that could be produced in bulk when required. This means that instead of spending eminently on production, money could be spent on research and development as a cost-cutting consideration.

4.6 CONCLUSIONS

Global economic problems and the shift from military to civilian-based economic and technological advancement on the part of the leading supplier states encourages a change in previous patterns of excessive defence spending and production globally. This might precipitate that supranational management and control of conflict and peacekeeping should ensure the denial of access to weapons for the various warring parties on a global scale. The political utility of arms transfers appears to be weakening as arms recipients are not bound by superpower tensions to choose between arms produced by either the East or the West. This becomes more pronounced as voting behaviour within the United Nations or reliable influence over policy inclinations is no longer an effective option for arms supplier states. Moreover, the successes of defence conversion and diversification, particularly

amongst leading supplier states, might weaken the economic motives for arms transfers. This situation, however, is not a premonition for the disappearance of arms transfers, especially as arms continue to be produced within an environment of international anarchy actualised in the sovereign state system. Perhaps new technology might introduce novel systems that might reduce arms transfers in the long run, however, in the short-term, mechanisms have to be investigated and instituted for an improved regulation of the process.

There are currently three tiers in the arms production establishment globally. The primary and secondary leading suppliers are still preponderant in their production of advanced military hardware, which includes strategic missile systems, modern airframes, jet engines and electronic systems. On the other hand, the emerging supplier states have to produce equipment that contains foreign components as well as exploit sectors of the market that are abandoned or disregarded by the leading producers. The increase in the matrix of suppliers and equipment augments the potential for the incessant proliferation of weapons. The segmentation of the arms market also increases the probabilities that the wealthy and strategically favoured states will attain more potent systems than the rest. A trickle-down effect will occur (as is the case currently), wherein the less advantaged states who are eager to obtain state-of-the-art equipment, will purchase older or lower-tech equipment from the advantaged. Dealers who supplement inter-governmental transactions by collecting surplus equipment and thereafter sell it to needy governments and political groups usually provide this equipment. What usually transpires is that wars in one region commonly generate surplus equipment that is sold off to other conflict-prone regions, thus precipitating a contagious effect as the weapons from one war potentially fuel another.

Within any conflict situation the political dilemma of armaments involves the determination of influence that might be achieved through arms supply and the possible utilisation of force or the imposition of political control over arms transfers to the belligerents in the conflict. Generally, arms supplied to effect certain political outcomes in international relations have been proven by previous research to fail, perhaps due to the nature of the international system. The transformation of the bipolar system into a more open structure advances a certain number of profound changes. Firstly, access to arms has a potential to increase for states and armed groups within a buyers' market that sort of neglects the political implications of such supplies or the demeanour of the recipients. Secondly, there is no alternative to the conception that arms production provides a channel to higher technology and profits, and in future, consolidations, mergers, and co-production arrangements by

arms producers would be more likely and the surplus production and the impetus to export arms may consequently gradually shrink. Thirdly, the spread of technology encourages the lethality of armaments, complicating the security dilemma, and augmenting the possibilities for deterrence or desperation. Fourthly, the depression faced by military budgets encourages hopes for international negotiations and peace arrangements through supranational organisations that might set reasonable limits and promote global security. Finally, the necessity to find solutions to ethnic and border disputes magnifies the primacy of the political dilemmas arising from arms transfers, especially the transfer of small arms and inhuman systems, such as landmines.

The production and marketing of arms is a response to two major structural imperatives: firstly, the external pressures procreated by the intrinsically anarchic nature of the international system; and secondly, the expanded domestic demands for social welfare. These two systemic imperatives explain the moderate but uncompromising emergence of new centres of arms production and the subsequent dilation of the arms production and transfer system, prompting states to create military industrial complexes in order to meet their politico-strategic and welfare requirements, regardless of ideological orientation. Nevertheless, it is quite evident, judging from the prevalent motivations, that economic imperatives are a means of, rather than the opposite of attaining politico-strategic goals behind the formulation of arms transfers policies in the contemporary system of international relations.

The rationale for transferring arms is also critical in the determination of the stratification of emerging suppliers in the hierarchy of the arms production and transfer system into primary, secondary and tertiary emerging suppliers, as it is the case for the leading suppliers. However, the position of each emerging supplier is also determined by the geographical bestowal of resources and the period during which it began to establish the faculty for arms production and development. The question therefore is does it have the technological propensity to move to a higher level as an arms producer and supplier? The first attempt at comprehending this stratification amongst the emerging suppliers begins with a focus on the primary emerging suppliers such as Sweden, the Czech Republic, Italy, Canada, the Netherlands, Poland and Belgium. Hence, the focus of the following chapter will be on these suppliers, with specific reference to Sweden as a unique, non-aligned and neutral arms supplier state in Europe, which therefore makes it to be a remarkable model for the primary emerging arms producers and suppliers.

PART TWO

CASE STUDIES

CHAPTER 5 – SWEDEN: A PRIMARY EMERGING SUPPLIER WITH A POSTURE OF NEUTRALITY AND NON-ALIGNMENT

5.1 INTRODUCTION

The Swedish arms industry is technologically highly developed due to the state's neutrality stance that emphasises national independence and a high level of autarky in arms development and production. This insinuates that Sweden, like other primary emerging producers and suppliers, such as Canada and the Czech Republic amongst others, produces most of its various major conventional weapon systems that include naval vessels, combat aircraft, tanks, armoured vehicles, heavy artillery and missile systems. As a means of maintaining this diverse defence development and production capability under the conditions of shrinking defence budgets and the increased unit production costs for weapon systems, Sweden was compelled to increase international co-operation as well as to expand its weapon's exports. Despite an incessant policy of self-sufficiency, Swedish arms production is also typified by increased imports of foreign sub-systems and components that are utilised to develop indigenous weapon systems as well as an increasing tendency towards joint ventures. The Swedish defence industry, according to Wulf (1993b:147–149), is mainly composed of six core firms, employing a skilled work force of approximately 30 000, and defence research and development accounting for over 20 percent of overall research and development.

For Udis (1993:142), Sweden is an interesting case to study, especially amongst the primary emerging suppliers, as there is a strong interaction of both political and economic imperatives in the decisions to develop, produce and transfer armaments. Moreover, Sweden was never an ancillary to any superpower during the Cold War period, unlike the other primary emerging suppliers such as Canada and the Czech Republic. Since the early 1930s, Sweden pursued a politico-strategic posture of non-alignment and neutrality, which was buttressed by the intention to be independent from foreign arms suppliers, thus resulting in the state developing a relatively huge subsidised defence industry that was economically costly to maintain. Especially the capability to design and develop advanced weapon systems became onerous to sustain for a small neutral European state. Sweden was regarded as a medium-sized producer that had the capability to develop and produce a number of modern major conventional weapon systems, along with Italy, the Netherlands, Canada, the Czech Republic, Poland and Spain. However the country was faced with an intrinsic foreign policy

dilemma in its arms production processes: that arms exports were limited and procurement budgets were too small to sustain the current defence industrial base (Wulf, 1993a:10). The solution to this dilemma was to follow the Western European trend of streamlining its industrial base into co-operative projects with other industrial firms.

Sweden, according to Udis (1993:142–144), manufactures one of the most advanced aircraft, submarines, missile and radar systems in the world, which is a technical capability that the Swedish government indicated would be sustained through increased arms transfers and collaborative arrangements with other arms producers and suppliers globally. The perception within the Swedish government is that collaboration with other arms producers will lead to the sharing of sophisticated technology, particularly in the aircraft and electronic sectors, and this will spill over to the general industry, as a result strengthen Sweden's position in the global economy. However, this policy tends to clash with the neutrality stance that Sweden has pursued for more than sixty years, particularly the country's membership of the European Union (EU) and the intentions to co-operate with other member states in the development, production and transfer of sophisticated weapon systems. Furthermore, this position also encroaches on the other dimension of Swedish foreign policy, the stringent restrictions on arms transfers, which were being reviewed for their relaxation in the face of being involved in collaborative ventures that could be impeded by indigenous rules hindering transfers to third countries.

This chapter, therefore, is an endeavour to understand Sweden's position as a striking case study of a primary emerging producer and supplier of armaments within the hierarchy of the arms production and transfer system. What is more phenomenal about this case, is Sweden's predicament as a neutral and non-aligned state trying to sustain its defence production and transfers capability within the conditions of the internationalisation of the defence industries and specifically within the Western European context. As a country with one of the oldest defence industries, Sweden could have been regarded as a secondary leading supplier like France, the United Kingdom and Germany, however, the stance of neutrality and non-alignment obscured the country's status in terms of bipolar Cold War relations. These relations tended to elevate the protagonists on both sides, as well as led to the emergence of new regional powers that had also assumed a politico-strategic status as producers and suppliers of armaments that were able to compete at the same level with Sweden.

Hence, this chapter tries to look at the nature of Sweden's defence industry, which begins with defence production in the post-war and Cold War periods. Focus then shifts to the role of the defence industry in the country's political economy, mainly the defence industry and international political economy, and the role of the state in Sweden's defence production and transfers. Furthermore, attention is on arms production and exports towards the post-Cold War period, particularly the regulations and problems regarding defence exports, as well as trends in military research and development. Finally, the stance of neutrality is discussed within the conditions of the post-Cold War era, which is generally the role of the state, society and the defence industry under a different structural environment.

5.2 DEFENCE PRODUCTION IN THE POST-WAR AND COLD WAR MILIEUS

With the advent of the Second World War and the subsequent occupation of Denmark and Norway by Germany, Sweden's international trade linkages were severed, particularly with the United Kingdom, and as a result Sweden had to rely on German supplies for raw materials and mechanical equipment (Ikegami-Andersson, 1992:68). During the war, Sweden focussed its attention on building a technologically advanced and independent defence industry to effectively outfit its own armed forces, especially with advanced weapon systems such as tanks and aircraft, after being isolated from trade with the Allies in addition to the need to reduce its dependence on arms transfers from Germany (Holmström and Olsson, 1983:140). Hence the establishment of the National Industry Commission (IK), an organisation that was formed to manage the efficient augmentation of the defence sector (Ikegami-Andersson, 1992:68).

Actually, the industrialisation process in Sweden began in the 1870s, rapidly developing towards the end of the century and after the First World War. Ikegami-Andersson (1992:47–48) maintains that Sweden became one of the world leaders in the fields of iron and metal processing, electronic engineering, as well as paper and pulp manufacturing, which remained as intact industries even after the Second World War. Thus, Sweden benefited greatly in the post-war reconstruction of European industry and infrastructure as a result of eluding the war's destruction and accordingly emerging as a comparatively superior actor in science and technology. Because of a rich technological background and a highly modernised educational system, Sweden also managed to absorb advanced foreign technology to develop its own industrial base with a capability to produce indigenously designed advanced weapon systems. With the increased tensions in Europe after the Second World

War, Sweden remained as an isolated state after attempts to establish a Nordic defence alliance crumbled with Norway and Denmark joining NATO. This position, Holmström and Olsson (1983:141) argue, compelled Sweden to adopt a foreign policy of "non-alignment in peace aiming at neutrality in war", as was the case before and during the Second World War.

Defence production in the period 1954–1979 was largely determined and sponsored by the Swedish armed forces, thus becoming the basis for the nature and direction of the country's defence industry. Although there were no fundamental changes in the country's foreign policy since the end of the Korean War, the defence outlays doubled effectively in the period from the mid-1950s to the late 1960s. Nonetheless, according to Holmström and Olsson (1983:142–144), as a percentage of total Swedish production, defence production dropped from less than five percent to less than four percent in the 1960s and to approximately 3.5 percent in the late 1970s. Although most of the defence outlays were utilised on personnel and maintenance, a substantial, albeit diminishing, share was used in the procurement of new weapon systems characteristic of fixed-size armed forces, particularly from the mid-1960s toward the end of the 1970s. However, as weapon systems became technologically more complex, the costs of individual units also increased, so was the quantity of personnel due to conscription, which was devised to ensure a very large, rapidly mobilisable, contingent in times of war in order to supplement a relatively minute peacetime permanent force. This situation insinuated that the country had to be able to equip increasing armed forces with advanced weapon systems when the economic resources were consistently receding, with the struggle between quantity and quality in production becoming the norm.

Table 5.1: The Leading Firms in the Swedish Defence Industry

FIRM	LOCATION	SPECIALITY
Saab-Scania	Linköping and Jönköping	Aircraft, missile systems, motor vehicles and electronic systems
Volvo Flygmotor	Trollhättan	Aircraft engines, motor vehicles, trucks, tractors, rocket engines and tanks
Ericsson	Mölndal	Communication and electronic systems
SRA	Solna	Communication and electronic systems
FFV	Arboga and Jönköping	Small arms, anti-tank weapons, bombs, ammunition and mechanical military equipment
Bofors	Karlskoga	Tanks, guns, missiles and ammunition
Hägglunds	Örnsköldsvik	Combat vehicles and all-terrain vehicles
Svenska Varv	Karlskrona and Malmö	Warships, such as submarines and other naval vessels

The option for quality, which was the most prevalent trend, implied that the military posture of engaging the enemy beyond the country's frontiers could not be effectively executed from all directions as other forces had to be equipped with technologically less-advanced weapon systems. This military posture insinuated that priority had to favour the air force, as it received approximately 60 percent of all the equipment procured in the early 1960s, ultimately becoming reduced to slightly more than 50 percent in the late 1960s and the rest of the 1970s (Holmström and Olsson, 1983:145–146). This reduction, however, also affected the army and the navy, as armoured units and naval vessels were reduced due to both economic and military-strategic imperatives. These reductions were endorsed in instances wherein cheaper alternatives could be chosen as a result of technological advancement, such as the option for missiles instead of aircraft, which was engendered by the rapid progress in electronics. Thus fewer firms received the majority of the vanishing orders for defence equipment and systems, especially the leading firms (see Table 5.1 above) such as Saab-Scania AB, Bofors, Volvo, Ericsson, Hägglunds, and the state-owned Förenade Fabriksverken (FFV).

From the1960s toward the 1970s, three quarters of the defence equipment was purchased from these six enterprises, which ultimately resulted in one or two firms producing one category of weapon systems, and sometimes compelling others to establish joint research and development ventures with assorted costs and benefits. Benefits were attained from continuous contact between the producers and the domestic armed forces, which through long-term relationships generated a certain level of proficiency arising from the persistent application of research, development and production faculties, and subsequently leading to longer production runs that reduced the unit costs of the equipment procured (Holmström and Olsson, 1983:146–147).

Nonetheless, despite the benefits of the processes of concentration, there were short- and long-term costs as well, which, according to Holmström and Olsson (1983:197–198), became more pronounced in the 1970s. For both economic and politico-strategic reasons, there were strong arguments in favour of procuring indigenously produced equipment, since the armed forces had specific requirements that could not be gratified through imports without exorbitant modifications. However, the positive spin-offs arising from military research and development on the Swedish economy and society were not taken into consideration by the armed forces when deciding on the type of equipment to purchase, as politico-strategic considerations were preponderant in the determination of such decisions. The focus of the Swedish military was on the long-term effects of a dwindling indigenous defence industry on the capability of the country to defend itself, since

retaining a sufficient domestic technological capability and to at least modify or license-manufacture foreign produced equipment was considered as significant in both military and politico-strategic terms. Both arguments maintained that indigenously produced or modified equipment was resilient to enemy countermeasures, and that dependence on defence imports permitted foreign political interference as well as depreciated the Swedish state's sovereign stance of neutrality and non-alignment.

Yet the pressure to import escalated due to the rapid increase in the sophistication of weapon systems resulting in higher development costs, particularly since domestic demand in Sweden was limited, and for politico-strategic reasons, co-production arrangements were considered to be inappropriate in order to reduce costs. The only alternative, therefore, was to import foreign produced systems or components for indigenous licensed-production, which throughout the 1950s and 1960s amounted to approximately 10 percent of total procurement. More than a third of foreign equipment was purchased through the military purchasing agency, Försvarets Materielverk (FMV). Most of these imports included technology, sub-systems and components for the production of missile systems, helicopters and various aircraft (Holmström and Olsson, 1983:198).

Sweden was also more than willing to participate in joint or co-operative arms development projects with members of the European Free Trade Association on weapons procurement, particularly in areas such as self-propelled guns, radar-guided torpedo boats, anti-tank missile systems, and surface-to-surface tactical cruise missiles (Frank, 1969:132). There were also efforts by the Swedish arms manufactures to engage in international co-production arrangements through co-operation and mergers. However, Holmström and Olsson (1983:150) argue that these endeavours were limited by the high degree of concentration within the country's defence sector, wherein each defence sub-sector was overshadowed by a single producer, except for the electronics sub-sector. This situation created problems for other industrial firms, as they preferred a diversified sub-sector that would not be bogged down by stagnant monopolies procreated by firms that were specialised on a particular technological capability, from which positive spin-off effects were normally anticipated. It was rather different to a situation wherein there was a conglomeration of both defence and civilian manufacturers who did not rely solely on defence contracts but could also combine their efforts or be sub-contracted to satisfy specific military requirements. For these latter enterprises, a vigorous conversion from civilian to military production or vice versa was amicably amenable.

The high degree of concentration within the Swedish defence industry was characterised by mergers and co-operation arrangements, which became conspicuous in the 1970s with the emergence of single producers in each sub-sector of the industry, except for the electronics sector. In the 1980s, according to Ikegami-Andersson (1992:78), close to 50 percent of the total expenditure of the Defence Material Administration (FMV) went to the five major arms producing firms, Saab-Scania, FFV, Bofors, Ericsson and Volvo. Similar to the general Swedish industrial structure, this high concentration in one sub-sector of the defence industry was also reflected in the civilian industry. Moreover, there was a high level of collaboration amongst the major defence producers in each sub-sector, especially in the realm of high technology, such as aircraft development and production, with the JAS Industrial Group being a prime example. Another example was the merger between FFV Ordinance and Bofors AB in 1991 that resulted in the establishment of Swedish Ordinance-FFV Ordinance/Bofors AB, which in 1992 became Celsius Industries, a merger between Bofors, CelciusTech, FFV Aerotech and Kockums (Deitrick, 1999:153). These collaborative arrangements were obligated by constraints in the technological and financial capacities of each manufacturer as well as the limited number of industries.

Accordingly two main deductions could be made concerning the Swedish concept of an arms industry. Firstly, in the Swedish context, arms production formed a minute specialised sector of each and every large corporation (Holmström and Olsson, 1983:162). According to Ikegami-Andersson (1992:78–79), there were considerable efforts by Swedish arms producing firms to diversify their production, either into developing new defence products or to producing civilian products, which was inspired by the dearth of reliance on defence production for the major corporations, reflected by the share of defence sales in their total sales (see Table 5.2 below). For those industries whose production restricted diversification into civilian production and which faced serious financial constraints, such as the manufacturers of naval vessels, these were propped by the state through nationalisation.

Table 5.2: Degree of Dependence on Defence-Related Sales

CORPORATION	Saab-Scania	Volvo	Ericsson	FFV	Nobel Industries
PERCENTAGE OF DEFENCE SALES	8	1	11	50	25 – 29

Source: Ikegami-Andersson, M. (1992). **The Military-Industrial Complex: The Cases of Sweden and Japan**. Aldershot: Dartmouth.

Secondly, the state entertained the proclivity of retaining defence production in privately owned enterprises since the defence sector was closely connected to the entire engineering industry, thus the leading arms producers were the private corporations that were also preponderant in the Swedish economy as a whole. These private corporations, Holmström and Olsson (1983:162–163) allege, were also linked to each other through family relationships or through the financial institutions, such as the Wallenberg group. The Wallenberg group was involved in more than half of the purchases made by the state's military purchasing agency, FMV, as a result of its preponderance in the three leading corporations, Saab-Scania, Ericsson, and ASEA (Allmäna Svenska Elektriska AB, which had absorbed Hägglunds and Söner in 1972 as a parent corporation). The Volvo Group and AB Bofors, with its subsidiaries, accounted for approximately 13 and 10 percent of deliveries to FMV respectively.

The Swedish government also encouraged firms to collaborate or to amalgamate in certain sub-sectors, which nonetheless was perceived to be a prevailing trend for defence industries in the new international political economy (Ikegami-Andersson, 1992:78). Moreover, Holmström and Olsson (1983:163) believe that a trend was developing towards a greater involvement of foreign role-players. The role played by foreign influence was expressed in five ways, through: (1) foreign subsidiaries within Sweden, such as Svenska Phillips, which was entirely Dutch-owned; (2) direct imports from abroad; (3) minority shares that became owned by foreign companies within Swedish corporations; (4) the utilisation of foreign sub-contractors; and (5) the outsourcing of maintenance work to foreign companies.

5.3 THE ROLE OF THE DEFENCE INDUSTRY IN SWEDEN'S POLITICAL ECONOMY

5.3.1 The Defence Industry and the International Political Economy

As the Swedish economy was primarily managed by the government with a large public sector, the conditions were therefore conducive for the government to implement arms production and transfer policies with minor constraints arising from other sectors of Swedish society (Ikegami-Andersson, 1992:53). Defence production accounted for less than two percent of total industrial production in Sweden, with around 90 percent of defence production being produced by the engineering sector, which was more or less five percent of this sector's total output. The chemical industry, on the

other hand, produced around five percent for the defence sector, particularly explosives, since the Swedish chemical industry was smaller than the engineering sector, hence was the value of its output. In the 1970s, the defence industry as a whole had approximately 40 000 employees, with 36 000 being directly engaged in production, and an additional 18 000 personnel being employed by defence sub-contractors (Holmström and Olsson, 1983:165–166). Although Sweden managed to reduce military expenditure and arms transfers according to its security stance of non-alignment as well as a restrictive foreign military sales policy, in the 1980s, however the country increased its arms transfers to India and other states in the Middle East. These increased military sales led to the addition of new control measures in order to ensure that government control and the non-aligned stance were sustained, nonetheless with mediocre successes (Holmström and Olsson, 1983:166).

As a small state in Europe, Sweden had a proportionately huge military production faculty, which necessitated increased arms exports. For example, the share of arms exports to total exports fluctuated between 0.8 percent to approximately 2 percent in the period 1985 to 1990 (see Table 5.3 below). During the same period, Sweden became the ninth leading arms supplier, and moreover, due to its gradually expanding involvement in international arrangements for collaboration in arms development and production, its role as an arms supplier became increasingly pronounced. The incessant dilemma, however, according to Ikegami-Andersson (1992:41–44), was the ability of Sweden to reconcile this role with its non-aligned and neutral stance as well as its image as an advocate of global disarmament and arms control. With the increasing trend towards the globalisation of the world economy, especially after the end of the Cold War, Sweden managed to remain as a unique actor in international politics. This was based on the state's idealistic policy of non-alignment and neutrality, which ensured a self-sufficient defence industry as well as a consistent policy on restricting arms transfers.

Table 5.3: The Share of Arms Exports to Total Exports

1985	1986	1987	1988	1989	1990
0.82	1.22	1.57	2.02	1.81	0.98

Source: Ikegami-Andersson, M. (1992). **The Military-Industrial Complex: The Cases of Sweden and Japan**. Aldershot: Dartmouth.

Ikegami-Andersson (1992:44–46) argues that as an advanced industrial country, with a splendid indigenous technological background and a highly skilled workforce and engineers, Sweden is one of the relatively affluent countries in the world, although heavily dependent on exports as a result of

a constricted domestic market. Therefore, the economy in Sweden is oriented more toward intra-regional and international trade, as well as overseas production through multinational corporations typical of other countries in the EU. Moreover, Sweden has a large state sector in the national economy that also plays an important role in military research, development and production and arms transfers. In the 1970s, the export of defence products in Sweden accounted for approximately 1 percent of the country's total exports, and for 3 percent of the engineering sector's total exports. Towards the end of the 1970s, 21 percent of defence production went to exports with less than 40 companies being involved, and Bofors alone accounted for more than 51 percent, while the combination of Karlskronavarvet (for warships) and Förenade Fabriksverken (FFV) accounted for close to 36 percent of such exports. The transfer of aircraft dominated arms exports in the early 1970s, while towards the end of the decade traditional weapons, such as artillery systems, small arms and ammunition, became prevalent. Close to two-thirds of arms transfers went to the Nordic and the non-aligned states in Europe (Holmström and Olsson, 1983:170–171).

Military research and development accounted for more than general research and development, as the government had invested massively in the former programmes since the Second World War. For example, according to Holmström and Olsson (1983:172–174), in the 1970s, more than one-quarter of total outlays by the state on research and development were earmarked for defence projects, principally through the Ministry of Defence, which transferred three-quarters of these grants to the military purchasing agency, FMV, and the rest to the National Defence Research Institute (FOA), the central defence headquarters, and for medical research. The FMV transferred portions of military research and development grants to the various state- and privately-owned industries and consultants, most of which (approximately three-quarters) went to indigenous industries, especially the engineering sector's aerospace and automobile sub-sectors. The share of military-focussed research and development to general research and development was approximately 13 percent in 1973, declining to about 9 percent in 1979. Industrial contribution to military-related research and development was fractional compared to the contribution made by the state, and most of this contribution was earmarked for the export market.

In 1986, Ikegami-Andersson (1992:55–56; 60) maintains that the government funded 36.9 percent of the total military research and development expenditures in Sweden (see Table 5.4 below), as compared to 52.4 percent in France, 46 percent in the United States, 38.5 percent in the United Kingdom, 35.3 percent in the Federal Republic of Germany (FRG), and 19.9 percent in Japan.

Within those states where there was a greater contribution made by the government towards military research and development, the implication was a relatively intimate relationship between the government and industry. In other instances, such as the FRG, government was close to the institutions that conducted research and development projects such as universities and other colleges. Moreover, in most instances where military research and development was mainly financed by private entrepreneurs, it was often subsidised through government funding. As a small European state that primarily relied on indigenous military research and development, Sweden spent a relatively large amount of financial resources on military-related research and development. Outlays on military-related research and development were considerably increased in the 1980s as a result of the development of the JAS 39 Gripen fighter aircraft as well as the development of an anti-submarine warfare research project. In 1988, Sweden spent 8.8 percent on military-related research and development in comparison to other Western countries (see Table 5.4 below), with France spending 16.2 percent, the United States 12.7 percent, the United Kingdom 11.6 percent, the FRG 6.1 percent, and Japan 2.35 percent.

Table 5.4: Comparing Sweden's Military Research and Development Expenditure

Developed States	United States	United Kingdom	France	FRG	Japan	Sweden
1986 (Percentage of State funded R and D)	46	38.5	52.4	35.3	19.9	36.9
1988 (Percentage of Military R and D to other R and D)	12.7	11.6	16.2	6.1	2.35	8.8

Source: Ikegami-Andersson, M. (1992). **The Military-Industrial Complex: The Cases of Sweden and Japan**. Aldershot: Dartmouth.

5.3.2 The Role of the State

As a ratio of total government expenditure, military expenditure in Sweden was gradually reduced since the end of the 1950s due to economic and financial adversities, which demanded the privatisation of social welfare imperatives that had guaranteed the persistence of the Social Democratic government (Ikegami-Andersson, 1992:57). Although there were general arguments that a small producer and supplier, such as Sweden, could have an exceptional technological niche in a specific field of defence production if it was buttressed by the state, the Swedish government nonetheless provided financial support to boost diversification strategies with the intention of ensuring versatility in the face of a vacillating international arms market. The Department of Industry, according to Holmström and Olsson (1983:158), established a special committee in 1979

to investigate such possibilities, which resulted in the underpinning of certain Saab-Scania and Volvo projects, as well as the propping up of other industrial sectors, such as textiles, steel, and shipbuilding, so as to enable them to survive the conditions of economic degeneration.

Table 5.5: The Degree of State Intervention in the Defence Industry

Developed States	United States	United Kingdom	France	FRG	Sweden
1960 – 1985	31.6	40.8	42.3	42.3	48.4
1980 – 1985	35.6	47.8	50.6	48.4	64.5

Source: Ikegami-Andersson, M. (1992). **The Military-Industrial Complex: The Cases of Sweden and Japan**. Aldershot: Dartmouth.

State intervention was more pronounced in Sweden, Ikegami-Andersson (1992:52–53) argues, as a result of a greater share of government expenditure that was a percentage of the Gross Domestic Product (GDP) as compared to other leading suppliers in the Western hemisphere (see Table 5.5 above). Moreover, government employment was significant (32.1 percent in 1980 to 1985) compared to other developed countries. With such a large public sector, it insinuated that the government was in control of a large share of Sweden's national economy, especially since there was a high degree of collaboration between the government, labour and business in the determination of state economic policies. Actually, according to Holmström and Olsson (1983:163), the defence industry managed to influence military decision-making during the Second World War with the establishment of a national procurement agency, a predecessor to the FMV, within which government and industry co-operated in devising procurement policies. With the end of the war, this co-operation ceased, albeit there were no contradictions between the two on issues relating to national defence or arms procurement, as both agreed on the need to strengthen Sweden's stance as a non-aligned state in the midst of a Cold War confrontation.

Since the importation of weapon systems was not a preferred option, especially during the 1950s and the 1960s, government and industry, as well as the legislature, were compelled to co-operate in developing new weapon systems that had to be commensurate to the adopted stance of non-alignment. Such an environment, on the one hand, permitted the defence industry to determine the direction and the time required to develop and produce weapon systems with less consideration for specific military requirements. The general concern was therefore the maintenance of a particular domestic production capability regardless of the need to meet the military-strategic objectives of the armed forces. With the decline of the political tensions in Europe during the late 1960s, government

and industry were criticised for adopting such a stance, particularly since an increasing debate concerning the military-industrial complex was unfolding in the United States (Holmström and Olsson, 1983:163–164).

On the other hand, the type of co-operation that existed between the government and the defence industry in Sweden discouraged the establishment of industrial associations to lobby the government to adopt certain policy objectives. It was only in 1986 that the major corporations such as Bofors, Saab-Scania, FFV, Ericsson Radar, and Volvo Flygmotor decided to form the Association of Swedish Defence Industries, Sveriges Försvarsindustriförening, which was a descendant of Swedish Aerospace Industries (SAI). SAI, according to Ikegami-Andersson (1992:79), had previously co-ordinated and represented the interests of firms in the aerospace sub-sector such as Saab-Scania, Volvo Flygmotor, LM Ericsson Telefon company, SRA Communications and FFV, especially where they required a collective national voice. Nevertheless, these associations were less significant compared to the FMV (Defence Material Administration) and the ÖB (the Supreme Commander of the Armed Forces) in terms of the general planning for arms production and procurement.

Public opinion was also vehemently opposed towards the power wielded by the conglomeration of the military, the arms manufacturers, and the state bureaucracy through the generation of profits and national prestige for their selfish interests by building unjustifiably huge and costly armed forces. The major focus of the critique of the military-industrial complex in Sweden, according to Holmström and Olsson (1983:164–165), focussed its attention on three major factors: (1) the lack of democratic influence over decision-making; (2) the rotation of powerful individuals between positions in the armed forces, the defence industry, and the Ministry of Defence; and (3) the extremely advanced level of military technology such that it could not meet the requirements of an essential defence capability.

The influence of the trade union movement was also heavily pronounced in Sweden, which, according to Ikegami-Andersson (1992:49–50), was a characteristic feature of the Scandinavian state since the beginning of the 20th century. However, there were strong arguments for shifting from social corporatism to enterprise corporatism, as is the case in other western European and North American states. Sweden, which was regarded as a distinctive neo-corporatist state, with a well-organised trade union movement since the 1980s, was characterised by a government that was

deeply engaged in co-ordinating relations between business and labour. This was a type of collaboration that was consolidated by wartime experiences that allured both economic interests into national policy-making and planning. The trade union movement became well established in Sweden in the latter part of the 19th century, with the labour organisation becoming the strong political base of the ruling Social Democratic party, thus ensuring the sustenance of working class interest through the tripartite collusion of government, business and labour.

However, Ikegami-Andersson (1992:50) alleges that this tripartite co-operation was disturbed in 1974, with the beginning of a world-wide recession, and the incessant strikes of 1980, which unveiled the flaws of institutionalised business-labour understanding and the subsequent state management deficiencies, mainly as a consequence of financial constraints. Nevertheless, the tripartite partnership still continues to influence and encourage state involvement in the national political economy, as trade unions are still substantially influential politico-economic actors, and hence are effective in the determination of defence policy in general, and arms production and transfer policies specifically. A consistent tripartite partnership in the determination of state defence policies continues to ensure the sustenance of a high standard defence industry, with a steadfast research and development capability to ensure the country's self-sufficiency in military technology.

5.4 ARMS PRODUCTION AND EXPORTS TOWARDS THE POST-COLD WAR PERIOD

5.4.1 Defence Exports: Regulations, Problems and Prospects

In 1985, the share of Sweden's GNP represented by defence production was approximately 1.1 percent, with the share of total industrial output occupied by total arms production output amounting to 1.8 percent, after decreasing from 2.1 percent in 1978. Only 10 percent of military equipment that was procured by the country's armed forces in 1985 was directly imported from foreign suppliers. Nonetheless, there were considerable levels of licensed-production and co-production arrangements with foreign firms as well as the indirect importation of components and sub-systems that ranged from approximately 30 to 35 percent of the country's total defence procurement. For example, jet engines and electronic components and sub-systems were license-manufactured in Sweden based on arrangements with foreign suppliers. The share of arms imports to total imports were approximated at 0.2 percent in 1987 and 0.3 percent in 1988, which included components, sub-

systems, data packages, as well as helicopters, army support aircraft and air-to-air missiles. Arms imports from the United States amounted to 67 percent, 22 percent from the United Kingdom, and 9 percent from the other suppliers (Ikegami-Andersson, 1992:87–88). The relatively large share of defence transfers from the United States brought into question the non-aligned and neutral stance of Sweden's foreign policy, as a primary supplier and recipient dependency relationship seemed to prevail between the two states.

As one of a few non-aligned and neutral states in Europe, Sweden had perceptions of having a defensive armed force, coupled to an advanced defence industry, that was envisaged to play a balancing politico-strategic role in Europe. Simultaneously, Swedish arms exports became reflective of those of other emerging suppliers in terms of the similar pressures that were encountered in the international arms production and transfer systems, regardless of the official statements that averred otherwise (Hagelin, 1988:157). According to Frank (1969:130), the Swedish defence industry produced approximately 85 percent of its weaponry for the country's armed forces, at the same time limiting its export capability through policies that were averse to transferring armaments to states that were likely to be involved in conflict. Although such policies were restrictive to a certain extent, they assured the country the flexibility to choose its preferred recipients.

As a share of total exports, arms exports accounted for 1.22 percent in 1986 and 1.57 percent in 1987, which increased to 2.02 percent in 1988, with aggregate values of arms imports and exports for 1978 to 1988 indicating that Sweden was a net exporter of arms. With increased transfers to India in 1978–1979 and in the mid-1980s, Sweden's arms exports increased substantially, which nonetheless contrasted the decrease in the country's defence share of the GNP. The implication therefore was that the pursuit of arms transfers was intended to maintain the arms industry operational (Ikegami-Andersson, 1992:90). The pressure to pursue arms exports was brought to bear by the limited domestic market as well as the fact that Sweden, as a net arms exporter, was thus compelled to sustain its defence industrial capacity.

According to the 1985 to 1989 aggregate exports, Sweden was rated as the ninth largest supplier of major weapon systems globally, the twelfth largest supplier to the Third World, and the seventh to the developed countries (Ikegami-Andersson, 1992:90–91). The major recipients of Swedish weapon systems included India, the former Yugoslavia, Norway, Finland, Denmark, Switzerland,

Malaysia, Singapore, the Nordic states and the neutral European states, as well as the newly industrialised countries in Asia. Since 1946, the governments of Sweden had attempted to control the export of what was called "war matériel" (Hagelin, 1988:157), under a committee review established in 1934, and the promulgation of an act in 1935 that created the War Matériel Inspectorate (KMI). All arms transfers were strictly regulated and monitored according to the country's military export regulations under the management of the KMI, which was assigned to the Foreign Ministry (Ikegami-Andersson, 1992:91).

The establishment of the KMI to control the sale of military products created a political dilemma that was related to the existence of a defence industry whose production became focussed towards the export market in order to maintain an advanced and sophisticated standard of arms design, development and production. These standards would otherwise be degraded if the defence industry was to focus solely on producing for the domestic market. Although Swedish policy restricted the transfer of arms to belligerents in conflict, practice was however different as long as the conflict was considered to be non-hegemonic, regional, or global in nature (Hagelin, 1988:157–158). The KMI operated according to guidelines laid down by the government in 1971, promulgated in 1972, and reiterated in 1983 and 1988, which prohibited the export of military equipment and systems to states involved in armed conflict or engaged in internal conflict. The guidelines also included states within which internal armed disturbances occurred or where weapons of Swedish origin could be used to suppress human rights (Ikegami-Andersson, 1992:91).

Since Sweden's policies were defined by its policy-makers as "nonalignment in peace and neutrality in war", which, according to Pierre (1982:120–121), was a highly armed posture of neutrality, it implied that the country was compelled to sustain a strong defensive capability that required a solid and self-sufficient defence industry. However, this perception tended to contradict with the revered restraints on arms transfers since a sophisticated defence industry was difficult to sustain without exports, particularly when domestic requirements were inadequate to achieve economies of scale. Notwithstanding, a self-reliant defence industry was considered as a cornerstone of the policy of neutrality and non-alignment.

Nonetheless, arms transfer regulations were often circumvented, as it was virtually impossible to monitor all arms transfers, especially for a net arms exporting country like Sweden (Ikegami-Andersson, 1992:91). Hagelin (1988:166–167) claims that some Swedish firms, such as Bofors,

were also accused of having violated arms transfer regulations with impunity by exporting certain restricted defence items to unacceptable recipients, or having permitted amiable recipients to re-transfer Swedish weapons systems to unsuitable states. Moreover, Swedish firms' involvement in international defence industrial co-operation was not restricted by the country's arms transfer regulations, and this implied that regulations could not restrict the transfer of co-developed weapon systems. Furthermore, regulations did not have stricter controls on re-transfers as these could be side-stepped in order to retain the reputation of Sweden as a reliable supplier internationally.

The re-transfer of arms by recipients of Sweden arms was, according to Ikegami-Andersson (1992:91), difficult to control as possibilities were high that such arms may have been re-transferred to restricted states and regions. However, despite the strict regulations on arms exports, these increased tremendously in the 1980s and 1990s as a result of innate ambiguities that made the regulations ineffective in prohibiting illegal arms sales. Hagelin (1988:165–166) also avers that the tensions between public opinion and the defence sector regarding arms exports were more visible when concerns were raised regarding military sales to racist South Africa and also when it became obvious that Sweden was being used as a surrogate by other Western states. Sweden had to accede to the dictates of the United States in order to attain desperately needed technologies for advancing the defence production sector, hence co-development and co-production arrangements were entered into with the United States regarding sales to Ethiopia and Latin American states. Accordingly, Sweden was implicated in the promotion of Western values to the Third World, on the one hand, whereas, on the other, Sweden had no similar arrangements with states in the Eastern Bloc nor ever exported its indigenously developed systems to those states.

Consequently, Sweden was prompted to reconsider whether to strictly apply a formal policy restricting arms exports or to loosely implement a formal policy. This was mainly due to the emerging trend of the internationalisation of the defence research, development and production faculties arising from the intolerable costs of modern sophisticated military technology and the reduction of demand for weapon systems in the post-Cold War era (Ikegami-Andersson, 1992:91). Restrictions on arms transfers were, on the one hand, unconditional, meaning that they were based on international arrangements, affiliation, and membership. On the other hand, the restrictions were also conditional, to wit, they were based on the principle that arms transfers were permitted and restricted by the government on a case-by-case basis. The Foreign Ministry was therefore responsible to ensure that arms transfers did not clash with unconditional restrictions as arms sales

were only permitted to states which were not engaged or implicated in armed conflict, harassed by internal armed unrest, and/or believed to abuse human rights (Hagelin, 1988:159).

Swedish arms exports were not only affected by unconditional and conditional restrictions, but were also limited by fierce international competition in the arms market, as well as the critical role played by public opinion. The major driving force behind aggressive arms exports was the recession in global defence economic conditions, which placed Sweden in a political dilemma of having to integrate restrictive arms transfer policies with the objective requirement of enhancing arms exports in order to sustain and improve domestic defence production. In the short-term, the only alternative that was availed to the defence sector was to utilise the flaws in the legal framework through the sale of dual-use technology and equipment; expanding the scope of international defence co-operation; and to export arms through third parties. Moreover, the government was compelled to provide incentives such as export credits and financial guarantees in order to support defence exports. These efforts became visible in the sale of artillery and other systems to India and Indonesia, which insinuated that involvement in conflict or the existence of internal armed contradictions respectively were no longer a barrier to Swedish arms exports to the Third World. Therefore, according to Hagelin (1988:163–164), the major factor that had to be considered was the intensity of the conflict, to wit, that when conflict was perceived to ebb, it was then decided what arms exports could be permitted.

Indeed, Pierre (1982:121–122) concurs that a self-sufficient defence industry that was restrictive on exports was expensive to sustain, as the case of Sweden proved with a highly advanced technological defence industrial faculty and, accordingly, a well-equipped defence force in the world. Its exports were exceptionally limited in quantity as well as to the number of recipients, and as an example, one of the leading arms manufacturing firms, Saab-Scania AB, can be taken into consideration. Saab-Scania AB, according to Holmström and Olsson (1983:150–152), was established in 1968 after Scania-Vabis AB, which produced trucks and buses, was absorbed by Saab, thus lessening the firm's reliance on defence production, especially in the 1970s, whereby most defence production was centred in the aerospace sector. The military share of total production was reduced from roughly 15 percent to approximately 10 percent as the 1970s progressed, and employment in the aerospace sector varied between 13 and 18 percent of the firm's total employment. Besides defence production, the firm was involved in the manufacturing of aircraft, which were at its technological core, including motor vehicles and electronics. The aerospace

division had a leading development capacity amongst Swedish firms as it employed more than 2 000 engineers who principally designed and developed military aircraft, and to a lesser extent missile systems and military electronics.

A ten percent profit was always guaranteed on all the deliveries conducted by Saab-Scania to the country's armed forces, and this system was subsequently changed in the mid-1970s whereby contract arrangements based on a calculated profit were devised. Holmström and Olsson (1983:153–154) assert that advantageous contracts were mostly obtained from the long-term and secure orders from the domestic armed forces that were, in most instances, paid in advance, leading to very high profits especially during the 1970s. However, towards the end of the 1970s, profits abated from more than 80 percent to approximately 33 percent. The production of military aircraft guaranteed Saab-Scania a technological edge, which was threatened when the future of the Swedish aircraft industry was questioned. This situation led the firm to engage in joint ventures with other local firms, such as Bofors and Ericsson, in order to lessen development costs through the utilisation of available foreign-developed components and sub-systems, and more significantly, to substantially expand its export faculty. In the 1960s and the early 1970s, Saab-Scania exported the Draken fighter aircraft to Denmark and Finland, the Saab 105 trainer/attack aircraft to Austria, and the Saab Safir combat support aircraft to Pakistan and other Third World states.

Approximately 20 percent of the aerospace sector of Saab-Scania's total production was exported in the early 1970s, which, however, declined in the mid- to late-1970s, as the firm failed to obtain export contracts for the Viggen fighter and the Saab 105 trainer aircraft. The reason, Holmström and Olsson (1983:154–155) argue, was their higher unit prices compared to those produced by the United States or other West European aerospace industries. Although Sweden offered generous offset arrangements such as investments in the production of aircraft as well as in other civilian sectors, all attempts failed as a result of the existence of a buyers' market, which insinuated fierce competition amongst firms in offset or counter-trade arrangements. Indeed, the relatively minute size of the Swedish aircraft industry, compared to those of the primary and secondary leading suppliers, insinuated that Sweden could not compete effectively in the offset or counter-trade infested buyers' market. Secondly, Swedish exports were also affected by the politico-diplomatic, ideological and politico-strategic considerations that were characteristic of the Cold War arms trade. Thirdly, as a result of Sweden's stringent regulations on weapons exports, Saab-Scania could not freely exploit the lucrative Middle East market, thus reducing its ability to expand its foreign

market. Consequently, by the end of the 1970s, exports amounted to more or less 10 percent of Saab-Scania's aerospace division's total sales. The solution, therefore, was to diversify production toward civil passenger aircraft and acting as a sub-contractor for other foreign firms. Nevertheless, despite the adoption of a diversification strategy in 1979, 83 percent of the aerospace division's total production was retained for defence production.

From 1988 to 1989 Saab-Scania became the largest supplier of defence equipment to Swedish armed forces, accounting for approximately 20 percent of national military research and development and acquisitions outlays, with the aircraft division and the subsidiary Saab-Scania Combitech being the major military producers. Production within the aircraft division and Saab-Scania Combitech accounted for 62 percent of total sales in 1989, decreasing to 48.8 percent in 1990, with the share of military sales declining as a result of commercial aircraft production. The share of military sales to Saab-Scania's total sales was reduced from around 15 percent in the 1970s to approximately 8 percent in 1988 (Ikegami-Andersson, 1992:75). As the main contractor for the JAS 39 Gripen fighter aircraft, Ikegami-Andersson (1992:75–76) maintains that the aircraft division of Saab-Scania accounted for 65 percent of the project, which was handled by the JAS Industrial Group, involving Volvo Flygmotor, Ericsson, and FFV (Förenade Fabriksverken). The JAS 39 fighter aircraft project was initially earmarked for the air force, and also had a potential export market world-wide with the co-operation of British Aerospace (Condom, 1996:23).

Although Sweden was a major producer of weapon systems due to its long historical role as a leading European power with a solid domestic industrial base, Sweden's foreign political, economic and military relations were thoroughly scrutinised in order to ensure that the stance of neutrality was not compromised in any manner, nor its national security policies were dictated upon by any other power. Therefore, the stance of armed neutrality compelled Sweden to export its defence products in order to sustain an independent research, development and production capability (Hagelin, 1988:159–161). This posture, according to Pierre (1982:122), was, however, very difficult to sustain since sophisticated technology was becoming exceedingly expensive, and Sweden was consequently pressured either to increase its exports and to enter into co-operative arrangements with other West European states in order to obtain and retain a qualitative technological edge in arms development and production. Such reconsideration therefore was accompanied by a cautious increase in arms sales since 1975, which was employed with the assurance that the policy of neutrality was not compromised whatsoever.

5.4.2 Trends in Military Research and Development

As a technology-oriented industrialised country, Sweden's gross domestic expenditure on research and development was in 1985 estimated at 2.9 percent as a percentage of GDP, and 3.09 percent in 1987 compared to 3.38 percent in the United States, 3.13 percent in the FRG, and 2.62 percent in France in 1986 (Ikegami-Andersson, 1992:93–94). The budget for military-related research and development increased substantially in the 1980s as a consequence of the development of the JAS 39 Gripen fighter aircraft, with both the defence agencies and the defence industries contributing 17.3 percent in 1983 to 1984. In 1981, the ratio of military-related research and development in the total national public fund budget for research and experimental development was 7.8 percent compared to 6.3 percent in Japan (1984), 10.1 percent in the FRG (1983), 36.5 percent in France (1980), 49.6 percent in the United Kingdom (1983), and 64.3 percent in the United States (1982) (see Table 5.6 below).

Table 5.6: Sweden's Ratio of Military-Related Research and Development

Developed States	United States	United Kingdom	France	FRG	Japan	Sweden
Percentage of Military R and D to other R and D	64.3 (1982)	49.6 (1983)	36.5 (1980)	10.1 (1983)	6.3 (1984)	7.8 (1981)

Source: Ikegami-Andersson, M. (1992). **The Military-Industrial Complex: The Cases of Sweden and Japan**. Aldershot: Dartmouth.

Due to the government's financial constraints and the subsequent limitations on the defence budget, military research and development was considerably circumscribed to approximately 9 percent of the defence budget in the 1983–1984 fiscal year, albeit this was a relatively large amount amongst the small neutral states of Europe. The functions of planning, arranging and financing of military research and development projects were considerably discharged by the government, with the other private arms corporations playing a substantial but rather subtle role. Nevertheless, with the increasing trend towards co-development and co-production arrangement amongst Sweden's defence firms and other foreign industries, there was a great potential for the private arms corporations to play a leading role in military-related research and development compared to that of the state (Ikegami-Andersson, 1992:94–95).

As the development of new sophisticated military technology became more costly in the post-Cold War period, thereby constricting the capacity of most countries to independently conduct military research and development, Sweden was also compelled to depend on imports from other suppliers. Moreover, according to Ikegami-Andersson (1992:95), it had to rely on the co-development of weapon systems, sub-systems and components with other foreign arms producers. The leading suppliers of weapon systems, sub-systems, components and technology to Sweden became the United States and the United Kingdom. Notwithstanding, Sweden found itself in a quagmire regarding its non-aligned and neutral posture *vis-à-vis* the growing need for reliance on foreign advanced military technology generated by the unbearable costs of indigenous research, development and production.

Accordingly, Sweden resorted to the fabrication of government-to-government Memoranda of Understanding (MOUs) permitting the exchange of military technological information with other arms producing states. These states included the United States, Canada, the United Kingdom, the FRG, France, and the Nordic states, and most of the MOUs were arrangements for licensed-production or the direct procurement of defence equipment and systems. Although most arrangements for co-development and co-production were mainly conducted with the Nordic and the neutral European states, the latest arrangements insinuated a tendency towards greater international co-operation with the North American and Western European (mainly NATO) states (Ikegami-Andersson, 1992:95). As an example, was the extent of international co-operation with British Aerospace (BAe) on the JAS 39 Gripen project, and the unequivocal encouragement by the Swedish government for local corporations to seek greater international involvement so as to reduce the costs of research, development and production.

5.5 MAINTAINING NEUTRALITY IN THE POST-COLD WAR PERIOD

5.5.1 State Intervention and the Current Defence Industry

International relations during the Cold War period permitted Sweden to steadfastly pursue its politico-strategic posture of neutrality and non-alignment and at the same time enhanced the potential of the armed forces both qualitatively and quantitatively. Hence, the necessity of independence in the supply of military equipment and weapon systems was emphasised as a pivotal part of the country's politico-strategic posture. However, according to Ikegami-Andersson

(1992:107–108), the nature of the Swedish economy did not conform with a defence industry that was entirely focussed on the domestic market, as it was intrinsically highly internationalised, to wit, having a long tradition of trade, as well as the licensed-production and overseas production from and through multinational corporations. This contradiction became more apparent with the conspicuously constricting domestic defence market, which compelled Swedish arms manufacturers to consider an aggressive drive to obtain and maintain a niche in the arms export market.

Since the end of the Second World War, Ikegami-Andersson (1992:108) maintains that the Swedish Social Democratic Party had a firm and solid political hold on the government with the strong support of the broadly organised trade union movement. This, therefore, insinuated that the government had a dependable grip on the national economy, the industry, as well as on general social welfare. Simultaneously, the private sector had the latitude within the state's industrial policy to pursue its own programmes such as rationalisation, with the state only intervening in instances where other industries required to be promoted through financial assistance or through nationalisation, for example, the shipbuilding industry. This element of state intervention was not however salient, except for cases that were really in need for such intervention. Nonetheless, there was consistency in the co-operation between the state, business and labour, especially in the development, production and export of armaments, which ensured the sustenance of a high level of military research, development and the production of relatively advanced weapon systems.

Those industries that were still under state-ownership were rather successful as part of a social corporatism that integrated both the interests of industries and labour, as well as of the bureaucracy and the military in the regulation and the promotion of arms development, production and transfers. Although a contradiction existed between the strict regulation of arms transfers, the high level of arms development and production, and the internationalised character of the Swedish economy, Ikegami-Andersson (1992:108–109) argues that the government managed to circumvent these antagonisms through the maintenance of a strong political control capacity. Sweden had a relatively large industry in Western Europe when compared to other small neutral states such as Finland, Austria and Switzerland, thus questioning the justification of such a high defence industrial capacity in the name of neutrality.

The Swedish leadership had advanced several justifications for the promotion of arms transfers to other states, especially the evidence that military personnel costs had increased, the inflation rate

was bulging, the defence budgets were unstable, and domestic demand had decreased. Moreover, the development of new advanced, sophisticated, and expensive technologies compelled defence firms to seek more markets and international defence co-operation in order to sustain their operations, as well as to maintain an advanced defence research, development and production capability. From a business economic perspective, the argument was that exports resulted in lengthened production runs, thus reducing the unit costs of the weapons systems. The market was therefore expanded and firms were enabled to reap better returns. The defence economic perspective also maintained that with exports, prices for weapon systems were reduced, thus making defence acquisitions more cheaper in the long run, whilst at the same time guaranteeing employment in the defence sector (Hagelin, 1988:161).

From a politico-strategic standpoint, the argument stressed the position that lengthened production runs ensured a protracted readiness, especially when the production process of a certain weapon system was supposed to be extended. All these perspectives were supported by the political economic argument that defence exports increased the state's total exports, thus augmenting its foreign exchange and balance of trade position. It was further argued, according to Hagelin (1988:161–162), that foreign arms sales enhanced Sweden's stature from a politico-strategic perspective, in terms of obtaining technology that would have been difficult to attain as a non-aligned and neutral state. Moreover, the diversification of suppliers of war material reduced the dependence of other recipient states from the leading suppliers that had strings attached to their arms transfers. Therefore, with the latter argument, Sweden was focussing on increasing its military exports to the Third World as a primary emerging supplier, particularly to those recipients that were not traditional markets of the leading powers.

5.5.2 Structural and Societal Conditions in the New Environment

According to Ikegami-Andersson (1992:109), Sweden had a comprehensive defence system that was labelled as "total defence", which included military defence, civil defence, economic defence, and psychological defence, that was ushered in by a Parliamentary Manifesto of 1972. This total defence system also promoted the defence industry as a central feature of Sweden's politico-strategic posture of non-alignment and neutrality in international relations. However, the changed conditions of the post-Cold War era were not supportive of a heavy military build-up as the demand for armaments was diminishing rapidly on a world-wide scale, whereas defence industries were

anticipated to sustain their production faculties for being able to provide the necessary implements during times of need. Moreover, governments internationally were faced with financial crises due to deteriorating national economies such that defence budgets became no longer sustainable, as was the case before the end of the Cold War. Within these changed conditions, the Swedish defence industry was focussed on being restructured or rationalised, as a recommendation by the Supreme Commander of the Armed Forces (ÖB) and the Defence Material Administration (FMV).

The processes of restructuring and rationalisation, which were planned for the beginning of the 1990s towards the 21st century, still maintained the basic tenet of self-reliance in the production of military equipment and weapon systems in preparation for war or crises. This production process was called "K-production" (Ikegami-Andersson, 1992:109), whereby the government and defence industries were expected to co-operate and co-ordinate their activities in encouraging the development of technology-led industries such as aircraft, missiles and electronics. Technology-led industries were to be encouraged particularly to participate in international collaborative arrangements so as to catch-up with rapidly progressing advanced technologies. K-production also promoted the sustenance of non-technology-led industries that produced traditional weapon systems, which formed the essential basis for self-sufficiency. Traditional weapon systems, such as artillery systems and tanks, were also supposed to sustain themselves through aggressive exports, integration or rationalisation, or else be replaced by imports. Nevertheless, the new conditions seemed to encourage the integration of both military and civilian technologies in the development of high-technology products, as well as increased participation in international arrangements for the co-development and co-production of high-technology weapon systems, particularly with NATO states (Ikegami-Andersson, 1992:109–110).

Although the tendency towards international co-operation with NATO states in the development and production of weapon systems and military equipment appeared to clash with Sweden's politico-strategic posture of non-alignment and neutrality, the state, nonetheless, already imported high-technology components and sub-systems from mainly NATO states (Ikegami-Andersson, 1992:110). Thus, the Swedish case becomes an illustration of "another form of adjustment to reduced domestic military spending – the conscious decision to sacrifice a domestic weapons capability across a wide range of weapons and seek alternative sources abroad" (Udis, 1993:144). The stance that Sweden adopted was nothing new, as other European states had done the same previously, nonetheless not under the conditions of non-alignment or neutrality. What appears also

to be a radical move from strict self-reliance in weapons production was the decision to no longer design and develop certain traditional weapon systems, such as main battle tanks, and instead import these from abroad. This insinuated that the range of defence products that were produced indigenously were to be reduced through imports and to specialise across a shorter range of military products. This can therefore be interpreted as a departure from the principled stance, which, according to Pierre (1982:122), made the Swedish defence industry to be a unique entity: being able to produce a wide range of technologically advanced equipment in very low quantities.

Furthermore, the process of the internationalisation of the defence industry, which began in the late 1980s, was, according to Sköns (1993:160–161), a result of intense transformations in the post-Cold War political economic environment. This process also included the national concentration of defence production through the establishment of mergers and acquisitions; diversification and conversion into processes of civilian production; the privatisation of formerly state-owned defence firms; and the reduction of outputs. These processes occurred simultaneously through overlapping or integrated strategies that were prompted by rapidly rising research and development costs that were complemented by declining or sluggish domestic or foreign demands for weapon systems, thus compelling the direction of technological developments towards the internationalisation of technology-led defence industries. The main pressure was the need to extend production runs in order to achieve economies of scale, which was rather difficult for small European states with small domestic arms markets, whose companies were impelled to seek co-operation with other foreign companies in order to survive in a highly competitive market.

However, such a situation created a difficulty for the control of arms transfers, as most initiatives were focussed at the state level for the implementation of policies, decision-making and regulations (Sköns 1993:161). On the one hand, the Swedish Social Democratic Party government was experiencing a diminishing grip over political and economic conditions domestically, as wildcat strikes became a characteristic feature of the country's political economy in the 1980s. Ikegami-Andersson (1992:110) believes that these strikes insinuated that the widely organised trade union movement, which formed the political basis of the Social Democratic Party government, was disintegrating or else loosing its influence. The implication, therefore, was that the government was slowly loosing its hold on the defence industry and simultaneously being unable to control arms exports, particularly with the growing trend toward co-development and co-production of weapon systems technology on an international scale.

On the other hand, the defence industries were becoming more interested and focussed on these developing trends in order to keep pace with changes in the high-technology race and to secure their place in the export market regardless of state budgeting and planning, thus suggesting a tendency toward less state intervention and control in their day-to-day activities (Ikegami-Andersson, 1992:110). What appeared to be the case in this instance was that Sweden was becoming compelled to follow the trend of integration in Europe, as the defence industry became more and more autonomous and integrated with other industries in the European Union. The government was thus prompted to adopt a more associative stance in its diplomatic dealings with other Western European states, including the United States and Canada. Therefore, Ikegami-Andersson (1992:117) extrapolates that power relations within the military-industrial-complex were becoming completely transformed, as the defence industries, instead of the state, began to take a leading role in the determination of the direction and pace of their own progress.

5.6 CONCLUSIONS

The Swedish defence industry was compelled to respond to two major external factors in its development since the Second World War. First, was the diminishing Cold War tensions in Europe, which undermined the unanimity that used to characterise the formulation of Swedish defence policy and the subsequent allocation of funds to the defence establishment, with the share of weapons procurement being the main casualty. Second, was the inevitable tendency of producing more advanced and sophisticated weapon systems that necessitated a rapid increase in development costs, thus prompting Sweden either to import some of its advanced military requirements or to be complacent with technologically mediocre equipment for its own armed forces. For the Swedish defence industry to sustain itself, Holmström and Olsson (1983:177–178) deduced that it either had to wait for domestic defence orders, which were not easily forthcoming; to focus on expanding the export market, which was nonetheless limited by the state's stringent arms transfers regulations; or to diversify into civilian production, which was rather possible as the defence sector was a fraction of large industrial corporations. However, defence contracts provided a tremendous impetus towards advancing the faculty for research and development, even though the defence sector was insignificant in quantitative terms, except for its technological sophistication as well as the politico-strategic implications that it posed domestically and internationally.

The organisational features of the defence industry in Sweden also reflected what Ikegami-Andersson (1992:119–120) referred to as a military-industrial-labour complex or a military-industrial fraternity instead of a classical military-industrial-complex concept of the United States. This was mainly due to the fact that Sweden perceived the necessity of a defence industry for different reasons than those of the United States. Primarily, the defence industry was viewed as a central feature of the non-aligned and neutrality stance in international relations. Secondarily, it was viewed as a significant engine for ensuring social welfare, particularly employment, in the political economy of the country. Whereas in the United States, the profit-making imperative had also developed to become the major driving force besides the hegemonic politico-strategic considerations, especially in the post-Cold War period.

Nevertheless, Sweden was compelled to cope within the changing global conditions, in particular the emphasis on the revered non-aligned and neutrality posture in international relations, which was over and above not mutually exclusive towards the internationalisation of the defence industry, although it made Sweden vulnerable to the vicissitudes of alliance (NATO) politics. However, other leading suppliers that were not aligned to NATO, including other emerging suppliers in the developing world, were also engaging in co-development and co-production arrangements with NATO member-states, albeit without anticipating any involvement in the problems that directly impacted on the alliance. The name of the game, nonetheless, was to diversify as much as possible in terms of partners and sources of supplies in order to sustain an eclectic and independent stance in the international hierarchy of states. This therefore augurs well for a posture of non-alignment and neutrality within the Swedish context, as this insinuates that there is no contradiction in engaging with whatever state in the pursuit of technological advancement, except when the issues of principle are put to the test.

Sweden therefore provides an interesting case as a non-aligned and neutral state in the developed world, which otherwise could have featured prominently as a secondary leading arms supplier along with the United Kingdom, France, and Germany, if it was part of the NATO alliance. In fact, Sweden has all the potential attributes of becoming a leading second-tier supplier if it pursues a closer relationship with the other NATO member-states in Western Europe in the post-Cold War period. Hence, it can be concluded that its non-aligned and neutral posture is the major factor that inhibits and contains this vibrant and excelling arms producer within the ranks of the emerging suppliers. However, despite the difficulties that Sweden still faces from adopting such a stance, it

can be clearly argued that the country is at the threshold of becoming a leading supplier, particularly within the market determined collaborative arrangements with other leading and emerging arms producers and suppliers.

Nonetheless, other cases that compare closely to that of Sweden as primary emerging suppliers, who are also at the threshold of becoming secondary leading suppliers are those of the Czech Republic and Canada. The Czech Republic, on the one hand, surfaced from the shadows of the Iron Curtain, and has categorically shifted into the NATO alliance in order to improve its politico-strategic and economic stature within the international hierarchy of states. Canada, on the other hand, has been and continues to be a dependent partner of the United States within the NATO alliance and the NORAD (North American Air Defence) joint-command arrangement. Both these establishments continue to assure the Canadian state and defence industry a primary position amongst the emerging suppliers, as it has a sound market within the NATO alliance, although being shadowed by the United States hinders the transition towards the leading supplier status.

The next case study therefore is that of Brazil, as a salient model of a secondary emerging supplier, it differs from the primary emerging suppliers on the grounds that it began late to develop an indigenous arms development and production faculty. Accordingly, Brazil, as a secondary emerging supplier, has not as yet captured the process of innovation at the edge of technological advancement, and therefore still relies heavily on inputs from the leading suppliers. Nonetheless, like other secondary emerging suppliers such as Israel South Korea, and Taiwan, Brazil has an expansive and enterprising arms production faculty that strives to develop specialised equipment at a very high level of technological sophistication. At the same time, Brazil maintains a distinguished niche in the international arms market, which is solely focussed at meeting the general requirements of the developing states of the South as well as the specific needs of the developed world.

CHAPTER 6 – BRAZIL: A SECONDARY EMERGING SUPPLIER TRYING TO DEVELOP A MARKET-ORIENTED DEFENCE INDUSTRY

6.1 INTRODUCTION

In terms of military strength, Brazil has incomparable armed forces in the Latin American region, and is the largest recipient of arms from the United States and Western Europe. The size of the armed forces is not linked to any security consideration, but merely a reflection of prestige as the prominent power in the region, indeed a global middle-level power. Brazil's economy is one of the largest ten globally, and a territorial giant (sharing borders with ten states) with a population of more than 120 million people. Although the country was ruled by an overtly nationalistic military junta from 1964 to 1985, with business and technocratic support in São Paolo and Rio de Janeiro, the martial regime strove to elevate Brazil into an economic and military giant that could become the future leader of the Third World.

Behind this perspective emanated the intention to establish an indigenous arms industry, with the military junta creating the *Industria de Material Belico do Brasil* (IMBEL), which was to control and augment the defence industry. The overall intention was to achieve the highest possible level of self-sufficiency in armaments, thus impelling the armed forces to obtain second-echelon indigenously designed systems over more advanced foreign-designed and developed systems. This motion, instigated by the army, was negatively received by the air force, which was eager to obtain systems that were more sophisticated than what was indigenously produced. However, according to Pierre (1982:237–238), a related objective was to augment the country's technological and industrial development, as defence production was perceived to provide a significant contribution to the scheme.

The Brazilian arms industry began substantial production in the mid-1960s and was further promoted by the discontinuance of military co-operation with the United States in 1977 after the latter criticised Brazil's human rights practices. Lately, Brazil was regarded as a competent supplier of armoured vehicles, main battle tanks, missiles, and light aircraft (Catrina, 1988:111). Brazil emerged as a vibrant secondary emerging arms supplier in the mid-1980s, with the three leading

firms of EMBRAER, ENGESA, and AVIBRAS constituting the backbone of the country's defence industry. The focus of Brazilian arms transfers were the Third World states, especially the Middle East, to whom simple and maintainable weapon systems were exported (Franko-Jones, 1992:1). In fact, Brazil provides a remarkable model amongst other secondary emerging arms suppliers such as Israel South Korea, and Taiwan, since the initiative to develop a vivacious defence industry was not buttressed or endorsed by any other global power as was the case with the latter two protégés of the United States. The initiative for establishing an indigenous defence production capability was actuated by the Brazilian nationalist élite, which believed that the defence industry was an engine for advanced technological development and a pillar of great power status in the international hierarchy of states.

This chapter therefore focuses on Brazil's efforts to develop a market-oriented defence production and arms transfer faculty, which begins with Brazil as an arms producer and regional power within Latin America, which expanded its production capability to become a global arms supplier. Secondly, the focus is on the structure of the Brazilian defence industry, the supply conditions, the demand for armaments, and the structure of the market. Thirdly, attention is on the economic foundations of the defence industry, the historical development of the industry's economic rationale, the role of the state in defence industrialisation, and the state and the defence industry in the promotion of technological development. Finally, the chapter addresses Brazil's defence exports, their successes and difficulties.

6.2 BRAZIL AS A REGIONAL POWER AND ARMS SUPPLIER

From a regional perspective, Pierre (1982:232–233) maintains that Latin America was not a major purchaser of arms, since the sophistication of armaments in the regions' inventory was relatively lower than in other regions with a greater potential for conflict. What became ironic, however, about the Latin American market was that the diversity of arms suppliers was more pronounced than in other regions. This was conceivably due to the fact that political motivations were less salient than in other regions, which insinuated the preponderance of economic or commercial considerations in the supplier-recipient relationships. Perhaps it was a consequence of the nature of disputes in the region, which during the Cold War were beyond the East-West dichotomy, and were rather focussed on the local geopolitical considerations that impelled states to obtain weapon

systems. Furthermore, the ascendancy of the military in most of these states during the Cold War period also became a driving force for these states to acquire arms.

Nonetheless, the region was foremost in developing region-based recipient-determined restraints on the accumulation of armaments, such as the 1974 Declaration of Ayacucho. The 1974 Declaration promoted the possibility for arms control arrangements to be initiated from the recipients' perspective rather than the perceivably condescending supplier-determined orchestrations (Pierre, 1982:233). Pierre (1982:235) claims that the nature of conflicts in the Latin American region were mainly based on revanchist and irredentist attitudes, being focussed on the primarily dyadic border disputes between the various states. These conflicts were between Peru and Chile, Argentina and Chile, Bolivia and Chile, Venezuela and Colombia, Ecuador and Peru, Guatemala and Belize, Honduras and El Salvador, and finally between Argentina and Brazil. Although the final dispute was not likely to end up in an armed conflict, it however had an influence on the two states' perceptions of prestige.

Nevertheless, the nature of conflict within the region did not necessarily warrant the heightened concern about national security and military readiness, except that the main reason was the ascendancy of the military juntas in most of the states, which were more susceptible to the requirements of their establishments, as they regarded themselves as legitimate guardians against insurgency and economic chaos. Their accession to power was based on emphasising subversive threats to obtain popular support and simultaneously distract the latter from internal economic actualities. For the martial rulers, the inherent appetite for sophisticated and precocious armaments was inevitable, particularly in a region lacking the existence of a bourgeoisie class, wherein the prestige of the military was habitually exalted, especially with the possession of modern armaments. Moreover, advanced armaments were perceived to be a cardinal attribute of sovereignty, accordingly influencing the establishment of indigenous arms industries for those states that could afford to do so, such as Brazil, Argentina, Chile and Venezuela (Pierre, 1982:235–236).

In the late 1970s, when the prosperous future predicted for Latin American states was proven to be a fallacy, Brazil began to adopt policies that were intended to maximise the advantages of accessible potential. These advantages, according to Anthony (1990:103–104), were identified to be the geographical location of the country as a littoral state; and secondly, the level of scientific and technological advancement that the country had attained in the previous years. Geographically,

Brazil had an enormous endowment of natural resources, and moreover, could exploit the expansion of trade relations between the states of America and the African continent that was a consequence of the end of Portuguese colonialism in the mid-1970s. The scientific research programmes that had been introduced in Brazil also initiated the ambition to pursue nuclear programmes. Furthermore, Brazil intended to strengthen relations with Argentina as regional powers that could co-operate in restricting foreign intrusion into the continent. This objective was pursued especially during and after the Falklands/Malvinas War of 1982 between Argentina and the United Kingdom, which also reinforced Brazil's ambitions as a maturing regional power. Finally, a common agreement existed between Brazil and Argentina that in order to be able to exploit the economic opportunities that the region availed, they had to improve their standards of technological advancement.

As the United States' arms transfers policy changed from military grants to counterinsurgency, particularly after the popular revolution in Cuba, Pierre (1982:233) alleges that Latin American states demanded more advanced and costly armaments that were withheld by United States officials. The reason was the Alliance for Progress policy, which was initiated by the Kennedy administration, prioritising economic growth and development over military spending, as both these variables were perceived to be mutually exclusive. Military spending was postulated to dissipate the meagre resources that could be used for development purposes and, accordingly, sophisticated arms were considered inappropriate for counterinsurgency operations. For instance, Latin American states were eager to obtain the then new F-5 fighter aircraft, which was denied by the United States on the grounds that it would cross the supersonic threshold that was imposed on the continent. Instead the United States offered the subsonic F-86 aircraft that was rejected by the Latin American states, which subsequently turned their attention to other European suppliers for more advanced equipment, particularly France for the supersonic Mirage 5 fighter aircraft (Pierre, 1982:233).

This however became a new trend amongst other trends that were identified by Pierre (1982:233) concerning the purchasing of military equipment by Latin American states. Firstly, was that the advancement of their military procurement programmes was relatively stable *vis-à-vis* other regions. Secondly, the variety of suppliers continued to increase, as other emerging suppliers such as Sweden, Czechoslovakia, Canada, South Korea and Israel complemented the leading suppliers. With the Latin American market becoming accessible, some of the European states took advantage of this opportunity and rapidly extended their defence exports to the Latin American region. Finally, autochthonous emerging suppliers, such as Brazil and Argentina, also became salient in the

region, making the Latin American market the most commercially competitive in the world. Therefore the commercial character of the Latin American arms market was a consequence of the withdrawal of the United States as a primary supplier of surplus stocks through grants, which was based on what was indicated to be the imperatives of hemispheric security.

According to Pierre (1982:233–234), some of the Latin American states, such as Brazil, focussed their attention on augmenting their indigenous defence industrial bases to become significant players in the international arms production and transfer system. What became notable about the Brazilian defence industry was the limited nature of state intervention, as most enterprises emerged not as state initiatives, which was the case in most Third World arms producing states, but as state-encouraged private resourcefulness. "Security", it was argued, "was best achieved by the development of a dynamic private sector" (Franko-Jones, 1992:2). Therefore, according to Franko-Jones (1992:2–3), the driving forces behind the success of the defence sector were economic factors rather than politico-strategic imperatives, in contrast to most arms producing and supplying states. The focus was to prioritise the needs of the international market in order to ensure a pulsating economic sector, rather than to capitulate to the demands of the political or military leadership. In this manner, therefore, success could be guaranteed by greater state and firm co-operation, with the former intervening to encourage and supplement the latter's efficacy in the market through financial props, diplomatic marketing, research and development assistance and a pragmatic sharing of responsibilities.

Franko-Jones (1992:4) underscores the fact that in the 1990s, when the global arms market began to shrink and demand started to focus on sophisticated electronics sub-systems beyond the Brazilian defence industry's proficiency, the military availed its research centres in order to stimulate technological growth. The defence industry was perceived by military strategists to be the driving force for advanced technological development, if the experiences of the United States' industrial development were taken into consideration during and after the Second World War. Accordingly, the defence industry was structured to conform to the supply and demand conditions dictated by the global arms market.

6.3 THE INDUSTRIAL STRUCTURE OF THE BRAZILIAN DEFENCE INDUSTRY

6.3.1 Supply Conditions

Within the Brazilian political economy, there were favourable supply conditions for the establishment of a successful defence industry, and these, *inter alia*, included a stable material and human resource base, a relatively advanced technological industrial faculty, a comparatively skilled workforce, a loyal business sector, encouraging state policies, and a vacant niche in the global arms market. According to Franko-Jones (1992:14), these conditions permitted the creation of a uniquely focussed industrial structure dominated by few giant firms that benefited from the availability of aboriginal natural resources, thus providing abounding inputs for production. However the dearth of oil, and the subsequent need to import more than 80 percent of it in the 1980s, had a negative impact on the country's balance of payments. Brazil adopted counter-trade strategies in its effort to overcome its dire petroleum requirements by barter trading arms for oil, thus relaxing the foreign exchange stress to permit the importation of intermediate commodities. Therefore, the drive for technological advancement and industrial development was also stimulated by the need to gratify fuel requirements, which at the same time became impossible as a results of a concentrated structure of the defence industry.

Even though the process of rapid industrialisation introduced by President Kubitschek necessitated a higher price to be paid by Brazil, nonetheless, a "veritable mystique of economic development" was born, which in 1962 resulted in a growth rate of 5.3 percent although this decreased to 1.5 percent in 1963 (Fiechter, 1975:21). Notwithstanding, the major distortions of the economic system were apparent and the Brazilian government had to confront them. Amongst these were the exacerbation of regional disparities as a result of the concentration of the industries in certain parts of the country, whilst other sectors of the economy were under-utilised. Second, was the over-mechanisation of plants, arising from the indirect subsidisation of imports of capital equipment, which stimulated the employment of advanced productive technologies that were often inappropriate for the existing domestic market, and which required normally inaccessible skilled labour power in Brazil.

Thirdly, was a tendency to fall back on inflation so as to increase the level of overall expenditure above the existing level of incomes. Fourthly, the agricultural sector was left relatively static, as a result of the general preoccupation with industrialisation. And finally, there was a dearth of administrative and managerial staff to oversee the implementation of the economic programmes (Fiechter, 1975:21–22). In addition, there were also serious problems encountered in the

technological sector, as requirement for foreign advanced technology became higher than the need for indigenously developed technology. Franko-Jones (1992:14) maintains that the state had to establish advanced research and development centres and to provide huge import subsidies in order to overcome the technological backlog, and as such, monopolies had to be promoted in certain fields as primary technological recipients. Monopolies began to emerge in the aircraft, missile and motor vehicle sectors as specific firms had to be earmarked to receive the most sophisticated technological advancements, also considering that a multiple firm production structure could not have managed to absorb a co-operative state-firm arrangement.

The main beneficiaries of these technological programmes were CTA, the Technology Centre of the Air Force, and CTEX, the Army Technology Centre. Obviously, CTA became instrumental in EMBRAER's establishment and accomplishments, whilst CTEX was later involved in the fusion of the electronic technology dimension in the armoured vehicle sector, led by ENGESA. The *Bandeirante* turboprop aircraft project, which was decisive in the inauguration of EMBRAER, was also initiated by CTA, with the military engineers providing the necessary political impetus for the firm's establishment. After EMBRAER had fully developed its in-house technological capabilities, the focus of CTA was shifted towards other supplier firms in the defence industry (Franko-Jones, 1992:14–15). Brazil also had a large pool of skilled workers from which the defence industry could attract labour power for arms production. For example, Franko-Jones (1992:15) claims that engineers and technicians who were required for the production of aircraft and missiles were recruited from graduates of the Aeronautical Engineering Institute (ITA), and skilled workers were selected from the large of pool of labour specifically trained for the automobile industry, particularly heavy vehicle production, by the Army Engineers Institute (IME), and which were comfortably transferred to the production of tanks.

Since the 1930s, the state was persuaded to support the defence industry through the concepts of "Security and Development" that were championed by the Superior War College (E.S.G.), which galvanised for public support and state investment in military production with the accession of the military into Brazilian politics in 1964. A programme of military industrialisation was advanced by E.S.G. trained officials, advocating the provision of incentives and direct subsidies to private entrepreneurs in the defence sector (Franko-Jones, 1992:15). The E.S.G. was also buttressed by the Social Research and Studies Institute (I.P.E.S.), an institution sponsored privately by supporters of

"Security and Development", who advocated a capitalist perspective on the development and reconstitution of the Brazilian political economy (Fiechter, 1975:29).

The main motive for this purely partisan stance for the defence sector, according to Franko-Jones (1992:15–16), was the initial scepticism by the private sector towards the political demand for indigenous defence production, which was construed to require high initial capital investments, equivocal technologies, and unpromising opportunities when compared to alternative domestic undertakings. On the other hand, national security concerns were perceived to be distrustful of foreign capital, which was believed to be extensively focussed on high technology manufacturing. Hence, the state became the main driving force behind defence production, promoting and initiating the establishment of arms industries through the provision of technology, human resources and a guaranteed domestic market.

According to the scholars and graduates of the E.S.G. and the I.P.E.S., national security and economic development were intertwined concepts, mainly since a modern armed force required the consent and productive capacity of the whole population behind its war effort. In short, in order to be able to maximise national security, all the factors of economic production had to be coherently planned and employed towards one national objective, simultaneously minimising domestic tensions. The proponents of this school of thought argued that economic backwardness that was preponderant in most Third World states was a consequence of internal contests driven by global ideological struggles, which were the main calamitous threats to national security. As a cogent concomitant to development, national security could be optimised by a counter-insurrectionary approach that was diffused into all sectors and activities of Brazilian society under an assertively centralised administration that boasted an unmatched planning faculty (Fiechter, 1975:29).

The goals of the centralised administration, according to Fiechter (1975:29), were to emasculate the traditional oligarchy, through the introduction of agrarian reforms that guaranteed increased productivity instead of redistributing land according to the norms of social justice; overhauling the electoral system; renovating transport and education; eliminating inflation; and establishing a financial market. Moreover, from an economic perspective, the nationalised sector had to be strengthened while eliminating the inefficient state enterprises and inviting foreign and domestic capital to build a robust private sector in the Brazilian economy. Accordingly, as soon as the military regime took over power in 1964, Castello Branco was assured of a strong military and

civilian support base from the graduates of the E.S.G. and the I.P.E.S., who had a common approach to Brazilian problems and challenges as well as their solutions, along with a prepared cadre to assume government responsibilities.

In the late 1960s and early 1970s, Krause (1992:155) maintains that arms production was accelerated with the intention of increasing regional hegemony and to achieve technological advancement. Indeed, international conditions played a very important role in the 1970s by ensuring that the defence industry received the necessary support and concentration it required within the domestic realm when Brazil, as one of those states ruled by autocratic military juntas, began to gain less and less support from the international community. Even the United States government, under the Carter administration, implemented the International Security Assistance and Arms Export Control Act in 1976, which restricted the transfer of arms to those states that were regarded as grossly violating human rights according to international standards (Franko-Jones, 1992:16). The reason for this was the 1968 and 1977 tensions with the United States regarding Brazil's poor human rights record. The United States ended military assistance arrangements and prompted Brazil to augment its indigenous faculty to produce armaments as a condition of security (Krause, 1992:155).

These changed international conditions expedited the process of concentrating and consolidating the defence industry in Brazil, as authorities perceived the need to ensure greater independence from vacillating suppliers in the North. The state, therefore, became the main champion of domestic defence production through the allocation of maximised resources and in facilitating the transfer of technological packages from alternative suppliers to the Brazilian defence industry. The defence industry also received increased support from the various state institutions that nonetheless encouraged the proclivity towards monopolies in the Brazilian market. Trends in the international arms market also encouraged analogous tendencies, as only the giant firms with the ability to sustain longer production runs and to establish extreme support networks were able to withstand the commensurate costs (Franko-Jones, 1992:16).

6.3.2 The Demand for Armaments

As the market structure of any defence industry is not only affected by supply conditions, the Brazilian industry also had to consider the characteristics of demand in both the domestic and

international spheres. Amongst other demand characteristics that moulded the Brazilian defence industry were the rate of growth of demand, the availability of substitutes, the elasticity of prices, the cyclical and seasonal nature of defence as a commodity, the method of purchasing, and the standard marketing procedures. The most conspicuous of all these characteristics was that the Brazilian armed forces were the sole source of domestic demand for mainly defence products along with the dual-use nature of certain military products to gratify both civilian and global requirements for applicable military technologies (Franko-Jones, 1992:18).

As the armed forces were the primary consumers of defence products, Franko-Jones (1992:18) maintains that they could order a specific weapon system and also determine its price. However, in Brazil, this capacity was forfeited in favour of foreign military demand and satisfying the demand for dual-use products, thus allowing most defence products to have a dual applicability. For example, aircraft could also be used for commercial transportation, armoured vehicles could also be converted into off-road vehicles or agricultural equipment, and rockets could also be used as civilian space systems. There were several reasons for promoting dual-use technologies. Firstly, large subsidies towards the defence sector could be painlessly legitimised. Secondly, according to the principle of "Security and Development", dual-use technologies became effective in strengthening the country's economic infrastructure by supporting the transport and agricultural sectors. Therefore, the state became the driver of economic development, rather than dissipating the country's resources. Finally, costs were reduced through longer production runs and intra-firm learning processes were augmented through the gratification of civilian demands, thus the defence sector was made more stable and the individual firms more self-sufficient. The argument, according to the Brazilian military perspective, was that the economic viability of defence firms guaranteed the security of the state.

The initiation of Brazilian defence firms was primarily focused on satisfying the needs of the international market, especially the Third World demand for arms, which was high-powered and enthusiastic in the late 1970s when the Brazilian industry was still surfacing. Hence, according to Franko-Jones (1992:18–19), the proclivity towards establishing larger firms that could meet the demand of extensive networks throughout the developing world became so prevalent in shaping the Brazilian defence industry. Production runs were also lengthened through international marketing strategies, as firms were permitted the flexibility to scramble for profit availed by the international market by postponing domestic defence orders for the periods of recession. The nature and

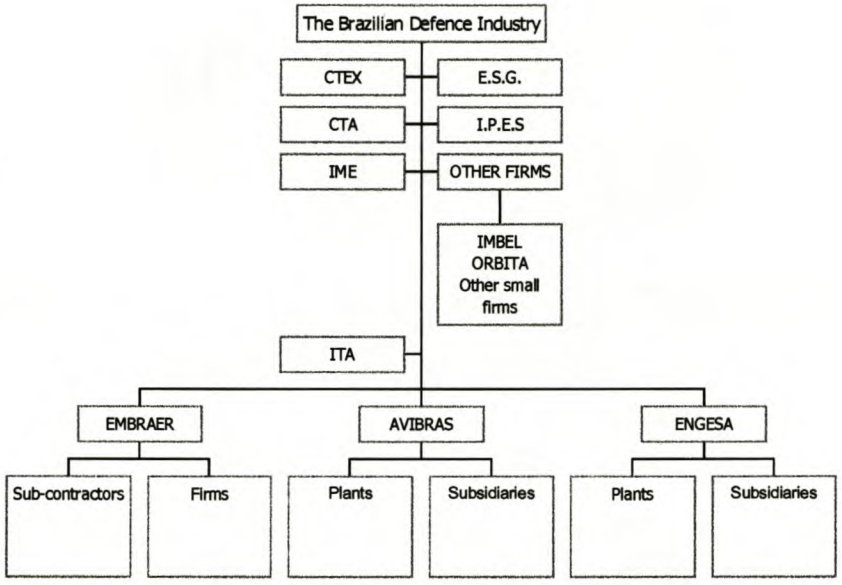
character of Brazilian equipment and weapon system were enthusiastically received in the Third World, since they were manufactured for rough terrain and were relatively uncomplicated, thus befitting the requirements for regional and internal conflicts. Therefore, instead of procuring sophisticated and costly equipment and weapon systems from the industrialised North, Third World states could purchase cheap, durable and lucid products from the Brazilian arms producers.

6.3.3 Market Structure

The characteristics of demand, particularly the substantial domestic military requirements and foreign military sales, carved the Brazilian defence industry into a hierarchical structure (see Figure 6.1 below), with the troika of EMBRAER, ENGESA, and AVIBRAS, followed by other smaller firms and subsidiaries producing sub-systems, and the nadir being occupied by suppliers of components and parts. Actually, the Brazilian defence industry is composed of approximately 350 state- and privately-owned enterprises, which are considered to be one of the most successful sectors of the Brazilian economy. The EMBRAER group accounts for more than 95 percent of total aircraft production in the country, comprising mainly of turboprop aircraft, which became successful in the United States' commercial commuter market (their military versions also did well in the arms market). Six firms comprise the EMBRAER group, which includes two primary sub-contractors, NEIVA and AEROTEC (Franko-Jones, 1992:20).

The AVIBRAS group is focussed on producing defence equipment and systems, conducting space and chemical research and developing electronic and communication systems within three plants in the state of São Paulo. The firm's installations are responsible for research and advanced engineering, electronic and mechanical production, as well as the manufacturing of antennas and earth stations for satellite communications. The other plants are focussed on manufacturing, assembling and testing defence systems and the production of rockets. AVIBRAS is considered to be the largest producer of rockets globally, as it manages to attend to a multitude of foreign orders. Three subsidiaries formed part of the AVIBRAS group, which produced launch vehicles for rocket systems and self-propelled porticoes for industrial utilisation, power electronics, control panel circuit breakers and trolley busses. Nevertheless, after the economic crisis of the late 1980s, these three subsidiaries were temporarily consolidated into a single facility (Franko-Jones, 1992:20–21) under the AVIBRAS group, which were also reported to be on the verge of license-producing the *Astros* II multiple rocket launcher for the armed forces of Sweden and Japan (Catrina, 1988:112).

Figure 6.1 The Structure of the Brazilian Defence Industry



The ENGESA group, as a third leading defence consortium, is constituted by eleven firms, with ENGESA Viaturas being the largest production unit, producing armoured vehicles such as the *Urutu* and the *Cascavel*, as well as the *Osório* main battle tank. Parts, components and other systems for the automobile industry are provided by verticalised firms acquired or formed by ENGESA in order to avert irregular foreign supplies as a result of embargoes, shortages, or politically motivated restraints (Franko-Jones, 1992:21). Franko-Jones (1992:22–24) believes that the expansion of ENGESA was very impressive, with only seven enterprises in 1983 being expanded to eleven by 1988. The strategy employed by ENGESA was to ensure that production for the Brazilian armed forces as well as for the international market was accelerated through the mobilisation of prepared suppliers in the automobile industry. Moreover, ENGESA sub-contracted other firms within the Brazilian industrial sector that were eager to provide other components, parts and sub-systems in order to compliment its vertical production structure. Therefore, ENGESA's success was mainly attributable to its effective combination of horizontal and vertical procurement strategies, which guaranteed lower costs and easy maintenance for its products, as well as the employment of fruitful international marketing schemes.

The horizontal procurement strategy employed by ENGESA is also very interesting to note as it did not push towards the establishment of new industries, but instead generated demand for prevailing firms. Thus rapid deliveries were facilitated and production risk were diffused through widespread subcontracting, amounting close to 30 percent of overall production and assembly, accordingly securing approximately 98 percent of indigenous development and production. Furthermore, the application of standard parts and components within its products, especially tanks and armoured combat vehicles, vouched for their simple maintenance, as mechanical breakdowns in combat conditions could be easily restored and embargoes comfortably circumvented. Hence, products from ENGESA were highly appealing to prospective recipients in the developing world (Franko-Jones, 1992:24). According to the president of ENGESA in the late 1980s, the capability to produce advanced armaments was obtained from the expertise brought by foreign immigrants whose citizenship was expeditiously processed in Brazil (Catrina, 1988:112).

The major reason for ENGESA to employ a horizontal procurement strategy, according to Franko-Jones (1992:25), was the Brazilian armed forces' proclivity to discourage destructive or predatory competition amongst local firms through a cautious apportionment of tasks as well as the stimulation of diversification within firms. Hence, firms like Bernadini were encouraged to innately introduce faculties producing bodies for trucks and tanks, after being engaged in manufacturing strong boxes and steel office furniture since 1912. From the experience obtained in the mid-1960s, Bernadini was involved in the modernisation of antiquated United States M-3A1 Stuart light tanks, in collaboration with the Biselli and Novotração enterprises, as well as ENGESA/ELECTROMETAL and D. F. Vasconcellos. Actually, in the 1950s, Louscher and Schwarz (1989:53–54) maintain that Bernadini was also involved with the Brazilian Army in the upgrading and refurbishment of the United States M-41 Walker Bulldog and the M-4 Sherman tanks, which resulted in a new Brazilian 30-ton MB-3 *Tamoio* battle tank. Moreover, the licensed production and purchase of primarily foreign components resulted in the production of new weapon systems (Louscher and Schwarz, 1989:54) such as the EE-T1 and EE-T2 *Osório* main battle tanks (Catrina, 1988:111).

Another fascinating sector within the Brazilian defence industry was the naval industry, which was characterised by ambitious projects that were often discordant with the available financial resources, and usually resulted in the suspension or cancellation of certain modernisation programmes. Projects that had been adopted in 1967 resulted in the Brazilian Navy becoming the most

modernised and capable in the region by the late 1970s. In 1984, an ambitious 15-year naval programme was presented to the legislature, which was aimed at doubling the country's fleet, with the core project being the replacement of the ex-Royal Navy's *Minas Gerais* World War Two vintage aircraft carrier with the local construction of an indigenous aircraft carrier (Anthony, 1990:109–110). Other projects envisaged in the 1984 fifteen-year naval modernisation programme, according to Anthony (1990:110–113), included the local construction of a nuclear-powered submarine and an extensive refit project for the INHAUMA Class corvettes. The ultimate intention was to develop the capacity to export naval vessels under EMGEPRON (*Empresa Gererícial de Projectos Navais*), an organisation linked to the Navy that was established to oversee and facilitate naval production.

Besides the naval programmes, horizontalised production strategies within the Brazilian defence industry led to the sustenance and development of firms such as Gurgel, Biselli, Motopeças and ÓRBITA. ÓRBITA was established as a missile consortium consisting of ENGESA, EMBRAER and other petty shareholders such as the state owned industry for War Material (IMBEL), as well as Eska-Engenharia and Parcom-Participaçôes. The consortium was responsible for subcontracting the production of parts and components for its progenitors, in addition to the research, development and marketing of missile and guided weapon systems, as well as sounding rockets and launchers for the global civilian space market (Franko-Jones, 1992:25–26). What is curiously perplexing concerning the establishment of ÓRBITA, according to Franko-Jones (1992:26), was the involvement of the state in encouraging a public enterprise that directly competed with an already established private firm, AVIBRAS, which was a trend previously discouraged by the state in the aircraft and armoured vehicle sectors.

Other firms that constituted a significant sector of the Brazilian defence industry were Novatraçâo, D. F. Vasconcellos, Tecnasa, the ABC group and IMBEL. Another firm, which was part of a larger conglomerate, the ABC group, was ABC Simuladores e Aviônica, producing simulators and avionics for the Brazilian aeronautics industry in conjunction with CTA (Franko-Jones, 1992:27). In Brazil, small arms were manufactured by a multitude of firms, prominent amongst whom was IMBEL, the Industry for War Material owned by the Brazilian Army. According to Franko-Jones (1992:28), the main role of IMBEL was to act as an agent for the promotion of research and development, combining both indigenous and foreign acquired technologies, and to act in co-operation with CTEX, the Army Technology Centre. Nonetheless, only 20 percent of IMBEL's

production was strictly military in nature, as most of the products were destined for the civilian market.

According to Krause (1992:155), defence industrialisation in Brazil led to increased exports and also incited the quest for technological advancement. The defence industry was perceived to be an important technological factor for economic development and rapidly elevated Brazil's position in the arms transfer and production system. Although most of the technological blueprints and components were obtained from West European states, progress was rather slow and fraught with an assortment of failures. Hence, Franko-Jones (1992:29–30) argues that the demeanour of the defence industry in terms of fixing prices, research and development, product strategy and plant investment, was often determined by the structure of the market. On the one hand, a competitive sector that compelled firms to accept market dictated prices usually denied them the capacity to sustain high standards of investment in their plants or products as a result of lower profitability. On the other hand, price fixing, larger investment in equipment and plants, greater research and development, and advanced marketing techniques were permitted by concentration. Nevertheless all of these intricacies can be distinctly assimilated through the cognition of the economic foundations of the Brazilian defence industry.

6.4 THE ECONOMIC FOUNDATIONS OF BRAZIL'S DEFENCE INDUSTRY

6.4.1 The Historical Development of the Industry's Economic Rationale

After Brazil had experienced a decline in its terms of trade, as a consequence of reduced coffee prices globally, which impacted negatively on the country's capacity to import capital equipment, President Kubitschek decided in 1956 to expand industrial production by establishing an automobile industry, as an epitome of technological growth. A new capital, Brasilia, was also established in the heart of Brazil, with an automobile industry buttressed by foreign capital that was enticed by various concessions. The automobile industry had a significant impact on the industrialisation process in Brazil, as industrial production had an average growth rate of 11 percent per annum between 1956 and 1961. Nonetheless, the industrialisation process had other negative effects, such as the transfer of a considerable part of the country's savings into the modern sectors through direct association with foreign capital or through investments in activities that were dictated by the employment of foreign capital. The result was a distorted industrial structure that was geared towards satisfying the

demand for durable consumer goods primarily required by the upper echelons of Brazilian society (Fiechter, 1975:20–21).

The military period in Brazil from 1964 to 1985 was also characterised by economic expansion and industrial diversification which became known as an economic miracle, whereby the military regime played a central role in reducing inflation, overcoming the political impasses and in improving the conditions for investment. Actually, the conditions for authoritarianism in Brazil were laid by the government of Getúlio Vargas (1930–1945), which was responsible for the repression of organised labour in order to alleviate the fears of the middle and upper classes and was instrumental in the development of an alliance between the industrial bourgeoisie and the military élite. The political instability that was characteristic of the government of João Goulart, which succeeded the Vargas regime, resulted in the deepening of the economic crisis and the military take-over in 1964. Thus the objective of the military junta was to engage the civilian meritocracy in overcoming the country's economic adversities, whilst it was focussing on overwhelming a deteriorating internal security situation. Consequently, an alliance was forged towards the cultivation of a coherent developmental strategy, which advocated "the centralization of policymaking in the hands of a small economic team backed by the repressive power of the military" (Graham and Lewis, 1994:213–214). The result therefore was the establishment of "favourable conditions" for economic growth, as well as the enhancement and augmentation of the country's industrial sector (Graham and Lewis, 1994:214).

The 1964 military coup became an opportune political moment for defence industrialisation, as the political, military and economic forces began to interact in modernising the Brazilian economy. Rather than the military élite being responsible for the creation of the defence industry, it was in fact the view of virtually the entire national élite since the 1930s to develop a defence industrial sector, which was perceived as part and parcel of the economic development model for Brazil. Hence, instead of it being an island, the defence industry became integrated within the country's whole industrial structure, strongly blended into civilian industrial production. Political independence was fervently intertwined with economic development, which, according to Brazilian thought, was driven by a determined state meritocracy that was able to channel political dynamism towards achieving a globally acclaimed model of political, economic and industrial excellence. Economic adroitness was viewed to be the generator of "domestic security by encouraging cohesion and

stability and by fostering international perceptions of Brazil as a world power" (Franko-Jones, 1992:55–56).

Franko-Jones (1992:35) argues that the ability to respond promptly to economic realities, which was considered to be analogous to responding to military commands, made the Brazilian defence industry successful, as it was based on the principle of regarding economic growth and industrialisation as constituting the cornerstone of national security. Therefore decision-making was rooted in economic and military standards that guaranteed the selection of technologies and marketing approaches that championed economic progress. Throughout the process of industrialisation, the concept of security was regarded as having a multidimensional character, which placed greater emphasis on economic growth as a prerequisite to military strength. Hence, the overwhelming tendency of conveniently allowing the private sector to play a greater role in the Brazilian economy in order to promote industrial growth that was responsive to market dictates rather than to military requirements.

The armed forces were tasked by military strategists to be the upholders of national consciousness, through pioneering the responsibilities of economic production, moral development, national education, and above all else, to put the interest of the nation before anything else. Thus, for Franko-Jones (1992:56–58) the armed forces became the pivotal force for economic development, as a uniquely dependable and resilient national institution that could unswervingly achieve political, economic and military objectives, as well as to develop a sound industrial structure to support well-equipped modern armed forces. Economic development, therefore, was regarded as a prerequisite for national security, which implied the establishment of the country's basic industry, and the defence industry becoming part and parcel of the larger industrialisation process. This approach was further reinforced by Brazil's experiences in both world wars, where it became obvious to the country's élite that modern industrial capabilities were integral to the development of military power and the assurance of national security.

The initiative began with the establishment of the *Escola Superior de Guerra* (E.S.G.), the Superior War College, in 1949, as an "Institute for Higher Studies" intended for the direction and planning for national security through expeditious industrialisation (Franko-Jones, 1992:56–58). The establishment of the E.S.G. was the beginning of the framework within which military officers were to determine the role they wanted to play in defining the national objectives, and elaborating and

elucidating the armed forces' defence doctrine. Although the E.S.G. was emulating the United States' National War College, its curriculum was more extensive and meticulous, since it placed emphasis on both security and development as commensurate variables, thus establishing the foundations of Brazilian "military professionalism" that became decisive in the accession of the military regime in 1964 (Fiechter, 1975:29).

Actually, according to Fiechter (1975:28–29), the E.S.G. became the hub of advanced military and social studies, wherein both civilian and military objectives were scrutinised and deliberated upon by military officers and civilian demagogues representing certain sections of Brazilian life, except the lower classes. Primarily, the objective was to develop a programme of action for Brazil that would ensure a shared approach to governance, security, economic growth and development. The E.S.G. was also supported by the Social Research and Studies Institute (I.P.E.S.), which was a privately funded institution, with patrons and participants from the E.S.G. circles meticulously studying the development and reconstitution of the Brazilian political economy from a capitalist perspective. The product of these studies was a synthesis of civilian and military perspectives that emphasised two main concepts, national security and economic development, which became the prime constituents of the Castello Branco administration.

Franko-Jones (1992:58–60) maintains that the process of Brazilian political, economic, and social development was rooted in four maxims that were developed by the E.S.G. First, was the ability to expand defence thought to accommodate political and economic security through the legitimisation of arduous political and economic programmes in the name of defence and security, as well as the mobilisation of financial and political support for defence industrialisation. Second, was the strong emphasis on the ability to utilise the country's abundant natural resources and strategic geographic locations towards making Brazil a strong global power, particularly in the Latin American and West African spheres.

Accordingly, and as a third maxim, the federal government, and most importantly its civilian leadership, were seen as ineffective in mobilising the country's resources towards accomplishing Brazil's full potential. Hence, finally, an agenda labelled as "developmental nationalism" was adopted, which was elaborated to ensure the formulation of national policy along painstaking scientific underpinnings in order to be able to achieve national priorities through the engagement of both the civilian and the military élite in the doctrine of security and development. When the coup

of 1964 was finally accomplished, these maxims became the pillars of the military government, with "national security" as its main motto and "Security and Development" as the official slogan. The focus was thus on national mobilisation for industrial development through defence production and expediting the arming of the security forces, in addition to militarily stressing the technological revolution in warfare (Franko-Jones, 1992:60–61).

6.4.2 The Role of the State in Defence Industrialisation

Although state involvement is limited in terms of political and military control, Franko-Jones (1992:65) maintains that the state is economically involved in defence production in an entrepreneurial role according to accepted business criteria. The state became engaged in dynamic partnerships with the leading firms in the expansion of the industrial base and in the promotion of technology and exports, whilst not replacing the activities of the various firms. Instead, both the state and the firms complimented each other by performing economic activities within which they had respective comparative advantages. The issue then was not who owned what, but who could do best in what, thus concentrating their attention on the most efficient and effective methods of achieving both their goals. Accordingly, the most favourable returns were achieved for both sectors through the employment of mutually beneficial strategies.

One of these strategies was the involvement of state agencies in the development of the defence industry, such as the armed forces research centres (CTEX, CTA, and EMGEPRON), the National Development Bank (BNDE), the Foreign Trade Agency of the Banco do Brasil (CACEX), and FINEP, which financed Brazil's most innovative projects. Therefore, the state was mainly involved in three major ways within the Brazilian defence industry: (1) research and development; (2) financing; and (3) state-ownership (see Table 6.1 below on the Sample of State-Owned Enterprises). Research and development became the major activity involving the state in defence production and, as such, will be deliberated upon in the following section. Financing, was mainly done through the BNDE, the Banco do Brasil and CACEX, as well as FINEP. On the one hand, the BNDE was responsible mainly for authorising the extension of credit to the various firms within the industry. Whilst, on the other hand, FINEP reported to the Ministry of Science and Technology for the financing of most of the defence industry's novel projects such as microelectronics, advanced aircraft, and rocket systems like the AVIBRAS's Astros II system (de Gouvea Neto, 1991:582).

The entrepreneurial role of the state in the defence industry, according to Franko-Jones (1992:86–87), insinuated that the state had to assume the risks of any other enterprise, organising and managing it according to strict economic and business principles. The whole effort was based on the ideology of developmental nationalism, which advocated the ability to gratify the requirements of the armed forces whilst ensuring greater economic growth. The idea was to encourage and promote the private sector through financial incentives and technological assistance. This therefore implied that the state only intervened in instances where the private sector had shortcomings and always emphasising the principle of maximising profit even within publicly owned enterprises. Therefore, both modes of management, direct and indirect, were employed by the Brazilian state, with direct management being manifested in the appointment of top officials for state firms; and indirect management reflecting itself in the incentives that were provided to encourage efficiency and efficacy in developing products and expanding operations domestically and abroad, the main intention being the effort to overcome the risks involved in product development and marketing.

Table 6.1: Sample of State-Owned Enterprises Involved in the Brazilian Defence Industry

Arms of Service/firm	Products
Army	
CBC (Companhia Brasileira de Cartuchos)	Firearms, ammunition, cartridges
IMBEL	Explosives, firearms, telecommunications
Air Force	
EMBRAER	Aircraft
Helibras	Helicopters
Navy	
AMRJ	Shipyard

Source: de Gouvea Neto, Raul. (1991). "The Role of Transnational Companies in the Brazilian Defence Tripod." **Journal of Latin American Studies**. Vol. 23, No. 3. pp. 573 – 598.

The expansion of the defence industry involved the promotion of technology and exports, which were unwittingly high risk endeavours that, when they were successfully applied, were effective in procreating growth in the defence industry (Franko-Jones, 1992:88). Usually it was the military that was influential in the development of the defence industry, particularly with regard to research and development. For instance, according to de Gouvea Neto (1991:582), the air force and the army were responsible for the training of most of the scientists and technicians through undergraduate and post-graduate programmes that were initiated since the 1940s. Basically the defence industry

benefited mostly from the technological innovations of the military's research centres, CTA, CTEX, and EMGEPRON, hence most of the indigenously developed military hardware were researched, designed and developed by these institutions.

Combined with its entrepreneurial role, was the ability of the state to be pragmatic on the efficient management of the defence industry, to wit, allowing the market to dictate the rules of business operations rather than focussing on ownership or the political influences, which normally had a negative impact on the firms' operations. Franko-Jones (1992:88–89) argues that the Brazilian state's pragmatic programme allowed for private efforts to function fully where possible, but at the same time supplementing them where the need for such involvement was identified. This approach was mainly influenced by the eclectic pattern of ownership that was prevailing in the defence industry. For instance, ENGESA, which was a private enterprise, was in partnership with the state-owned IMBEL, whereas the parastatal EMBREAR and the privately owned AVIBRAS were co-operating with the state-owned Aeronautics Technology Centre (CTA).

Notwithstanding, incentives and support were provided across the board regardless of ownership, with the overall intention of attaining economic proficiency. After observing the flaws of both the *laissez faire* system in the United States and the West European proclivities for public ownership, the Brazilian approach, according to Franko-Jones (1992:89), attempted to develop a system that would combine the best of both systems, which could at the initial stages avoid the problems of over-capacity and inefficiency in defence production. The formula was always ensuring that enterprises, regardless of ownership, behaved according to the dictates of the market, with the state co-ordinating its activities with those of the private firms in order to increase international sales. Therefore, the state intervened only to subdue substantial economic obstacles, thus dynamically blending private entrepreneurship with state encouragement and facilitation.

6.4.3 The State and the Defence Industry in the Promotion of Technological Development

The realisation by the Brazilian defence sector of the need to combine economic growth with a technological faculty, according to Franko-Jones (1992:95), was done through the involvement of the state in promoting the various dimensions of technology. In fact, the state was engaged in a well-orchestrated arrangement with the private sector and the multinational corporations in what de Gouvea Neto (1991:579; 594) terms as a "Defence Tripod". According to de Gouvea Neto

(1991:579), the state had to secure a well-balanced interaction between the three not only to guarantee the political and economic viability of the defence industry, but also to ensure that its products were competitive in the international market as a central means towards the general industrial development of the country. As a consequence, this tripod arrangement was even extended to other sectors of the Brazilian economy such as petrochemicals and computer industries.

The critical role for establishing a high technology industry was played by the wide range of research and development institutions through the policy of "segurança e desenvolvimento" (security and development) that was guiding the activities of the E.S.G. (Franko-Jones, 1992:133). There was a deliberate effort to establish a core of engineers, technicians, bureaucrats, and entrepreneurs for the defence sector that would ensure Brazil's economic independence and viability in the technological sector. Besides being a means towards an end, Franko-Jones (1992:95–96) claims that technology became an end in itself, which within the defence sector became rapidly generated. Within Brazil, as in other developing states, the achievement of technological development was limited by underdeveloped technological systems arising from historical circumstances. Virtually all developing states that had belatedly joined the global technological race found themselves caught within such circumstances of demanding the latest technology without possessing the fundamental technological systems. Hence, according to Franko-Jones (1992:96), most were compelled to instantaneously "develop products and scientific infrastructure to guide industrial growth in the technological age", which became "a difficult if not quixotic task".

In most instances, within the developing world, such as Brazil, the defence industry became an appropriate institutional framework to encourage indigenous technological developments (Franko-Jones, 1992:96). After realising its pivotal role in the country's technological development, without merely focussing on maintaining a production line for military equipment, the Brazilian defence industry invested largely in research and development institutions, such as the Military Engineering Institute, the Marine Research Institute and the Aeronautics Technology Centre (CTA). Franko-Jones (1992:131–132) avers that most of the outputs of these research institutions were transferred to private defence industries that usually received orders from the state and accordingly employed these breakthroughs in the development of qualitative civilian products. In this manner qualitative research and development was evenly utilised for both civilian and defence production, thus facilitating national research and development.

The role of the state was to acquire those technological capabilities which the firms on their own could not obtain, and also granting protection, providing exemptions from tariffs and taxes, and also ensuring that it would finally demand the results of the whole process, thus augmenting international competitiveness through domestic support and procurement. The state also played the role of seeking new markets as their economic necessity was made apparent in order to promote further in-house research and to provide the scale necessary for engaging in expensive research and development projects (Franko-Jones, 1992:132–133). Franko-Jones (1992:133–134) maintains that institutions such as the Aeronautical Engineering Institute (ITA) and the Army Engineering Institute (IME) became central in bringing together the entrepreneurs and technicians to utilise their skills in the evaluation of alternative technologies. Firms were therefore equipped with the foundation and focus essential to developing production goals and techniques through state support that was communicated by a determined and pragmatic leadership, which also provided the necessary financial support and the material resources, as well as guaranteed the procurement of successful production.

In this fashion, indigenous military technological development and production was encouraged and facilitated, particularly the development of dual-use technologies earmarked for the Third World market. Moreover, the state ensured through its bargaining processes that Brazilian firms had total control over the imported technologies, which in turn guaranteed the firms the autonomy they required to utilise the newly-obtained capabilities for their own benefit as well as for the whole society (Franko-Jones, 1992:134). In addition, the role played by traditional defence multinational corporations in the transfer of technology to the Brazilian defence industry was, according to de Gouvea Neto (1991:591–593), reflected in the number of subsidiaries that were from the United States, Germany, France, the United Kingdom, Sweden, Japan, the Netherlands and Italy, as well as their collaboration with the local firms.

6.5 BRAZILIAN DEFENCE EXPORTS: ACCOMPLISHMENTS AND ADVERSITIES

6.5.1 The Successes of Brazilian Defence Exports

In the mid-1980s, Brazil was ranked as the fifth leading arms exporter if the basis of measuring arms transfers were agreements instead of actual deliveries. Moreover, if other factors were taken into consideration, such as the role played by foreign components or the extent of co-production

arrangements, then the picture would be virtually different. Nonetheless, the representatives of the Brazilian defence industry were apparently convinced that the country had the potential to be a considerable participant in the arms market. This was particularly the case since production was not necessarily determined by the domestic market, as Brazil exported approximately 90 to 95 percent of its production (Catrina, 1988:113). As a global arms supplier, Brazil was almost at the same par with Israel and South Korea, as secondary emerging arms suppliers from the developing world. Moreover, between 1982 and 1986, Brazil was the leading Third World arms supplier to other states in the developing world, as well as to the developed industrialised states, with 99 percent indigenous production (compared to Israel with 91 percent indigenous production, the rest being re-transfers) (Franko-Jones, 1992:35).

Brazil's success as an arms supplier was partially due to its natural and scientific endowments: a strong industrial base, an abundance of natural resources, as well as a massive scientific community compared to other developing states. For instance, thirty-five percent of all scientific papers and books produced in Latin America in 1986 were from Brazil (Franko-Jones, 1992:35–36). Furthermore, Brazil was ranked second to India in terms of comparing the industries that were essential for arms production: iron and steel, non-ferrous metals, metal products, machinery, electrical machinery, and transportation equipment, as well as human resources that comprised the scientific community that had the potential to produce arms. Compared to India, Brazil had 25 percent of the industrial base that was relevant to arms production, whereas India had only 16 percent. The difference, therefore, was with regard to the scientific community, which was approximately 8 000 for Brazil and 97 000 for India, including scientists, engineers and technicians involved in research, development and production (Franko-Jones, 1992:37–38).

When arms producing states are distinguished according to their technological sophistication and industrial maturity, the assorted range of weapons they are able to produce, as well as the capability to design and develop rather than to license-produce, Franko-Jones (1992:39–40) argues that Brazil is regarded, together with Israel, South Korea, India and South Africa, as having both these faculties. As a secondary emerging supplier, Brazil can design and produce both a wide array and technologically advanced weapon system. There is a tendency to rank an arms supplier according to the quantity of arms it exports as well as the type of recipients to whom it exports arms, which, however, fails to take into cognisance the size of the domestic market, if, for example, the case of India is taken into consideration. Therefore, "these anomalies point to fact that the industrial base is

not the sole determinant of the size or export capability of an armaments industry" (Franko-Jones, 1992:40).

Nevertheless, Brazil is one of the emerging suppliers that has managed to aggressively export its products into the international arms market, with its aircraft and armoured vehicles enterprises, EMBRAER and ENGESA, becoming part of the leading industries in their domains of weapon systems. Ross (1989:18) maintains that the country was also successful in producing and exporting rocket systems, missile systems and naval vessels. Leading industrialised states have also purchased an enormous quantity of Brazilian produced weapon systems, including France, the United Kingdom and Ireland, and other weapon systems were mainly exported to states in Latin America, Sub-Saharan Africa, parts of Asia, North Africa and the Middle East. What distinguishes the Brazilian defence industry from those of other emerging suppliers, particularly those in the Third World, besides the dynamic partnership between the state and the firms as well as the enthusiastic fusion of technology, is the state and firms mutual pragmatism in the promotion of exports (Franko-Jones, 1992:139).

The state, and in particular the military élite, became aware that an economically viable defence industry relied on promoting arms exports, since they ensured that economies of scale as well as competitive and efficient production runs were attainable. The reason was mainly that the domestic market was too limited to support the fledgling (and even to sustain a mature) industry. Moreover, arms exports were regarded in politico-strategic terms as consistent with the objectives of power projection, and with the economic objectives of reducing the international debt burden and the costs of importing oil. Therefore, Brazilian arms transfers also allowed the exploration of other markets and exposed Brazilian civilian products mainly through counter-trade arrangements (Franko-Jones, 1992:139). Therefore, there were no policies restricting arms transfers as enterprises were supported by the government to market their products without any intervention except in instances where the government was restrained by international obligations, such as the arms embargoes against South Africa and Libya. Enterprises were allowed to freely market their products and the government was unequivocal in defending and blessing the commercial and private character of the deals (Krause, 1992:169). Brazil also used arms exports as a means to support military self-reliance programmes by using the export earnings to finance the costs of research and development programmes (Ross, 1989:5).

According to Franko-Jones (1992:175–176), there were four sources of comparative advantage for Brazilian technology exports. Firstly, Brazil could provide basically the same types of commodities or services that were provided by developed industrialised countries at a lower cost due to lower labour costs. Secondly, most of the products or services were adapted to Third World conditions and accordingly suited most of the Third World recipients and clients. Thirdly, Brazilian products were mostly developed from raw materials that were available in the country, and hence the supply costs were easily subdued compared to other producers or suppliers that had to import their production inputs. Therefore, the only handicap was oil, and as such, Brazil used arms exports in order to ease the oil burden. Finally, Brazil had the advantage of having developed its own technological breakthroughs, which made the country a viable competitor in both the industrialised and Third World markets.

The competitive character of Brazilian arms exports was primarily based on their lower costs as a result of government support and financing through technology subsidies, lower labour costs and the basic level of technology applied in the production process. Moreover, with most emphasis being on producing simple products made the production process less expensive, which in reality implied that Brazilian firms employed intermediate technologies that had long been explored and forsaken by the primary emerging and leading suppliers. Thus, most of the research and development costs were not on generating top-of-the-range technologies but "perfecting simple but unique systems" (Franko-Jones, 1992:177). Catrina (1988:113–114) maintains that the basic approach within the Brazilian arms industry was to manufacture uncomplicated and sustainable systems that were ideally apt for Third World conditions: inexpensive, easily operable, able to endure arduous circumstances, and readily available spare parts. The technique was to utilise standard components that were not difficult to obtain, according to the recipients' requirements and the supply conditions, as well as even providing the recipient with the technological details to indigenously-manufacture its own spare parts.

What was most important, however, was Brazil's arms export policy, which was defined as liberal, susceptible, lacking scepticism and unconditional (Catrina, 1988:114). Catrina (1988:114) maintains that recipients were free to retransfer Brazilian-made systems, and deals that were supposed to be surreptitious were made licit and handled accordingly. Indeed, the legal system prevented the release of official details and statistics regarding arms transfers, whereby economic or commercial interests were preponderant to foreign policy considerations. Therefore, the success of

Brazilian defence products in the export market, especially for Third World applications, was rooted in their simplicity, user-friendliness, easy-to-maintain, and durability in the face of rugged Third World conditions. Since the leading suppliers were pursuing the advancement of technology to its frontier, Franko-Jones (1992:177–179) argues that emerging suppliers such as Brazil attended to the needs of the Third World market, which because of limited budgets could only afford standard and inexpensive systems. Emerging suppliers, therefore, altered the global balance of power, as reliance by non-producing recipients on traditional leading suppliers was reduced.

Franko-Jones (1992:179–180) claims that one of the fundamental stimulants for Brazil's pursuit of arms exports was the dearth of oil within its inventory of natural resources. Besides the effort to assuage the oil handicap, arms transfers were also pursued to stimulate industrial production, to obtain hard currency, to ease the balance of payments, and to attend to the foreign debt burden. The millstone of oil could be best alleviated by arms exports, especially since the oil-producing Middle East and African states increased their demand for arms after the 1973 oil price hikes, becoming the leading arms recipients in the mid-1970s towards the end of the 1980s. Therefore, such oil-producing states became natural trading partners with Brazil, which, in turn, could provide the desired weapon systems.

Therefore it can be inferred that what made Brazil to succeed in this lucrative market were the barter arrangements that the Middle Eastern and North African states were pleased to entertain in exchange for oil. Hence the Brazilian oil company, Petrobras, was active in negotiating counter-trade agreements in exchange for oil with Iraq, Libya and Qatar, which helped to assuage Brazil's balance of payments problems (Franko-Jones, 1992:181). The most significant factor about Brazilian exports, according to Franko-Jones (1992:182–183), was the high degree of technological competence by EMBRAER (turbo technology), ENGESA (tank suspension systems) and AVIBRAS (Astros II multiple rocket launcher). These technological breakthroughs were indigenously researched and developed to suit Brazilian domestic conditions with less or none multinational participation. These achievements could be attributed primarily to the support and encouragement that the industry received from the state to manoeuvre within the international markets, thus providing both political and economic returns for the state and the industry respectively.

6.5.2 The Difficulties of the Brazilian Defence Industry

By late 1987, sales for the defence industry, which were anticipated to be around US$2 billion, after a successful US$1 billion sales in 1986, dropped to approximately US$500 million. The most affected, according to Franko-Jones (1992:189–190), were the armoured vehicles producer, ENGESA, and the missile systems manufacturer, AVIBRAS, loosing almost half their workforces, accumulating increasing debts, and having to seek legal protection from their respective creditors towards the beginning of the 1990s. EMBRAER, which also experienced difficulties, nonetheless managed to increase its sales albeit behind the other non-defence-oriented national firms, as it also had to layoff a certain portion of its workforce. According to Franko-Jones, (1992:200), these problems that firms encountered with their labour forces due to retrenchments, low wages and salaries, rocked the defence industry. Professional personnel, such as technicians and engineers also used the defence industry as a transit centre towards greener pastures in the other sectors of the Brazilian economy.

Although there were various causes for these crises, two of these become generally salient. First, was the saturation of the international arms market, especially the dehydration of the Middle East orders in the second part of 1987 with the end of the Iran-Iraq war and the decline in the sales to the United States as a result of the contradiction on tariffs on Brazilian exports. Moreover, competition became intense in the arms market with the surfacing of other emerging suppliers such as Israel and South Korea; the primary leading suppliers' conversion from military grants and assistance to foreign military sales; and the efforts of the secondary leading suppliers to prop their export-driven industries. Secondly, as a consequence of technological advancement that was epitomised in the 1991 Gulf War, Brazilian defence firms were also compelled to adapt to the changing technological environment. Subsequently, Franko-Jones (1992:190–191) argues that the transition to new technologies rendered the Brazilian defence industry vulnerable to international market fluctuations, which insinuated that more investments were required for augmented research and development, as well as the importation of advanced electronic sub-systems and components.

Nevertheless, since the defence industry was regarded as a locomotive for economic development, based on the historically rooted principle of security and development, it was maintained that it would absorb the blows of international competition through additional investment in advanced technologies (Franko-Jones, 1992:191). However, such ambitious intentions did not conform to the

dynamic demands of the international market or to the changing political economic climate domestically. The reason, according to Franko-Jones (1992:191), was that Brazil was challenged by a debilitating inflation, the government was incapable of sustaining the defence industry as a result of a political transition to democracy, and firms were thus rendered impotent to absorb new technological advancements.

6.6 CONCLUSIONS

Since politico-strategic considerations are the main determining factors for states to opt for an arms production capability, weak industrial capacities are often overcome by the determination of sovereign states to reduce their dependence on other arms suppliers. Franko-Jones (1992:40–41) presupposes that the primary reason is the fact that the military capabilities of a recipient state are vulnerable to the political or military dictates of the main arms supplier, especially during wartime. Therefore, the perceptions of dependence have a potential to negatively impact on the public profile of the recipient state's armed forces, particularly the Third World states, whose desire for independence is also supported by the ideologies of nationalism and non-alignment. As a consequence, most developing states are prepared to sacrifice their meagre economic resources on defence production based on politico-strategic, military-operational and/or diplomatic considerations.

Other emerging supplier states were driven primarily by their position as pariah states in the international system, such that they could not rely on other suppliers for their military requirements, hence they strove to become relatively self-sufficient in their arms procurement. Thus, problematic and unreliable suppliers, who were responsive to internationally imposed arms embargoes or other politico-strategic or diplomatic restrictions, compelled states such as Israel, Taiwan, South Africa, India, Pakistan, South and North Korea to develop their indigenous arms production capabilities. A state that had developed an indigenous arms development and production faculty was, according to Franko-Jones (1992:41), usually accorded a unique status amongst the club of states that comprised an international military élite. With regard to those states in the developing world, such a status was often reflected in their ascendancy into being regional hegemonies or global middle powers.

Brazil is one of the states in the developing world that deserve such a status because, amongst other things, it possesses an advanced defence industry. The Brazilian defence industry is widely

constituted and diversified, although it is not a Third World industrial giant as is usually assumed. Franko-Jones (1992:28–29) claims that the peak year of the defence industry was 1987, when most of the firms performed to their utmost, albeit none of the top firms acquired returns exceeding more than US$1 billion. The insinuation therefore, is that the Brazilian defence industry is still far below the defence sectors of the secondary leading and primary emerging supplier states even though it is at the pinnacle of the secondary emerging suppliers. Moreover, Brazil only accounts for less than one percent of the major conventional weapons transfers globally, which implies that as a supplier state, Brazil is more susceptible to recessions in the international defence market, especially since it has a concentrated domestic defence industrial sector. Nevertheless, a robust defence industrial base is still regarded as politically essential, since according to national security analyses, it is deemed to be a national necessity for wartime conditions and a significant criterion for great power status.

From an economic perspective, the Brazilian defence industry can be able to sustain itself in the competitive international arms market if it adapts to the changing patterns of supply and demand. This can be done through maintaining the enthusiasm for technological advancement by linking defence with civilian production and by canvassing for a larger international market, especially the intra-American fraternity based on a broader regional vision of security. The trends followed by EMBRAER, of increasing civilian production, of reliance on private financial sources rather than the government, and of engaging in co-production arrangements with other foreign firms for technological acquisition and innovation, have the advantage of maintaining the firm within the international circles of defence production and development.

Brazil has two important pillars that can ensure a sustainable and a growing defence industrial capability: the focus on satisfying the needs of the international market; and the drive towards "perfecting simple but unique systems". A market niche will always be availed for cheap, lucid, easy-to-maintain but effective weapon systems within the developing world, especially since the international hierarchy of states continues to persist. Brazil, therefore, provides an amazing archetype of a secondary emerging supplier state, so is India within the ranks of the tertiary emerging suppliers such as South Africa, Malaysia, Singapore and Australia, amongst others. Accordingly, India becomes the focus of the next chapter, as a definitive case study of the tertiary emerging suppliers.

CHAPTER 7 – INDIA: A TERTIARY EMERGING SUPPLIER WITH A MAGNIFICENT BUT FRIGID DEFENCE INDUSTRIAL CAPABILITY

7.1 INTRODUCTION

The customary view of security according to India's interpretation was that the state had to be protected, its physical assets, social and cultural norms, as well as lifestyle, from external aggression, which demanded that the state should posses sufficient capabilities to counter external interference. However, after the mid-1970s, security began to be perceived as also the ability of the state to avert, counter and settle domestic unrest and conflict arising from parochial, sectoral or secessionists interests that could lead to the collapse or fragmentation of the state. The perceptions of internal conflict became a common feature of politics in the developing states, particularly as a result of discontented ethnic entities in multiethnic states, such as India (Thomas, 1986:3–4).

As part of the effort to offset the impact of such security vulnerabilities, India established one of the largest defence industries in the non-western world, albeit remaining one of the largest arms importers in the world. The major reason for this was that India's arms production was mainly focussed on licensed and co-production arrangements as a consequence of unsuccessful and dear indigenous arms projects, which were also not compensated through energetic exports like the other emerging suppliers such as Sweden, Canada, Brazil, South Korea or Israel. Although India had similar politico-strategic and socio-economic motives as all other states that opted for establishing an indigenous defence industrial base (Gupta, 1990:846), the Indian defence industry was not notably successful in penetrating the export market, as the country's defence exports were limited to small arms and insignificant items that in the 1980s only amounted to less than two percent of total production (Graham, 1984:177).

All the emerging arms suppliers were mainly motivated by the need to defend and champion their national sovereignty in developing an indigenous defence industry, which also included the necessity to sustain consistent military supplies in case of emergency as well as the ability to manoeuvre with regard to foreign policy positions. Moreover, the defence industry precipitated the industrialisation of the less-developed states and also reduced the hard currency outlays that were expended through direct foreign arms procurement. Inevitably, and inadvertently, all the arms

producing states found themselves having to cater for the export market, albeit the Indian defence industry was not pressured to become an enterprising arms exporter (Gupta, 1990:846–847), as it nonetheless enjoyed the availability of a relatively large domestic market.

In order to combat threats, India had to develop a technical capability based on self-reliance in both the civilian (automotive, aeronautics, electronics, shipbuilding, construction and civil engineering) sectors and in defence. Thomas (1986:6–7) maintains that the strategic posture adopted by India reflected primarily the manner in which great power relationships and hostilities impacted on India's perception of international relations. First, was the position that India occupied within the hostilities between the United States and the Sino-Soviet bloc, wherein the PRC was regarded as India's traditional foe. Second, was the restructuring of relations between the PRC and the United States after tensions between the former and the Soviet Union had become antagonistic.

Finally, was the more specific regional tension between India and its second traditional rival, Pakistan; the role that the great powers played in fuelling the arms race between the two South Asian states; and the influence of regional and global politics on the antagonistic relationship. For India, these developments in regional and international relations led to the attainment of a nuclear capability (first detonated in 1974), with Pakistan trying to achieve the same, and the subsequent shift in India's military strategic posture of "sufficient defence", to contain attacks from the PRC and Pakistan, towards "limited deterrence", combining both conventional and nuclear capabilities in fending off its adversaries (Thomas, 1986:7).

As an endeavour to address the position of India within, and as an archetype of, the ranks of tertiary emerging supplier states, politico-strategic considerations and the issues of defence production and procurement in India become intricately intertwined. The tensions within the South Asian regional context, which have of late (in the post-Cold War period) assumed a complex dyadic dimension, even to the extent of a classical action-reaction model, require that the focus should be on India's responses to the various threats through typical neo-realist spectacles. The advantage of such an approach enables the discourse to distinguish between India as a regional hegemon or global middle-level power and India as an arms producer and supplier that is supposed to be leading amongst other emerging arms suppliers. India possesses an elaborate, wide-ranging, expansive and indeed magnificent defence industrial base within the developing world, verily the largest in the Southern Hemisphere. However, the Indian defence industry has not impacted much on the

international arms market, and is not envisaged to do so in the near future, despite having the capacity to produce the whole spectrum of weapon systems than all of the secondary leading and all other emerging suppliers.

In order to address this enigmatic Indian case, focus will firstly be on defence procurement and the politics of choice, which includes the political disposition towards indigenous production, the economic considerations versus the military options, as well as the better options towards defence procurement and the politics of choice. Secondly, the defence industry is viewed in retrospect, which includes the evolution of defence production in India, the current state of the defence industry, the Indian defence industry's collaboration with other suppliers, along with the challenges and accomplishments of the defence industry. Finally, attention will be paid to the Indian defence industry's capacity to export its wares within the international arms market.

7.2 INDIA'S DEFENCE PROCUREMENT AND THE POLITICS OF CHOICE

7.2.1 The Political Disposition towards Indigenous Production

From the perspective of the policy-makers, India was better off indigenously designing, developing and producing its own weapon systems without relying on foreign suppliers for weapon systems or the technology to manufacture them. This, they argued, would enable the country to pursue an independent foreign policy; save valuable foreign exchange; augment its industrial production capacity; create new employment opportunities; produce long-term technological spin-offs into the national economy; and increase scientific and technical know-how that could be a force multiplier in the civilian sector as well (Thomas, 1989:190).

Efforts towards self-sufficiency were partly realisable, particularly regarding simple and less cumbersome technological endeavours. However, with regards to the production of sophisticated weapon systems such as combat aircraft, helicopters, naval vessels and tanks, problems were encountered as a result of limited facilities and the costs of research and development, in addition to the bottlenecks of production that often resulted in the employment of virtually obsolete systems. Therefore, comparing independent indigenous design, development and production of advanced weapon systems to those purchased from foreign sources, the costs were discovered to be exorbitant and the processes to be extremely cumbersome for the former. This was the experience gained with

the indigenous HF-24 Marut fighter-bomber aircraft project, which was phased out immediately after its performance was disappointing during the 1971 Indo-Pakistani War (Thomas, 1989:190–191). Moreover, its successor, the HF-25, which was designed in 1977, was never promoted to the production phase (Matthews, 1989:424). In fact, most of India's indigenous projects were distressingly infested with serious shortcomings, and as such, questions were being asked as to whatever went wrong with the Indian defence industry.

Gupta (1990:846) argues that the problems of the Indian defence industry could be traced from the inability of the political leadership to realise that a strong foundation was necessary for the establishment of a viable industry. Rather than pursuing the development of advanced weapon systems comparable to those produced in the West, India had to establish a proper base in terms of know-how, experience, and the research, development and manufacturing infrastructure for the production of sophisticated defence wares. Moreover, the political leadership pursued more than ambitious projects with the unrealistic conviction that the components to manufacture such systems could be produced domestically, which was rather an astigmatic perception of the country's technological capabilities. Therefore, the ambitions of the political leadership were to see India emerging as one of the most technologically advanced states in the world, which unquestionably also included a corresponding proficiency in defence development and production. Nonetheless, what were the various considerations regarding arms procurement besides the perceptions and the ambitions of the political leadership?

7.2.2 Economic Considerations *vis-à-vis* the Military Options

From an economic perspective, the licensed production or co-production of required foreign developed weapon systems was seen to be the most viable option, since it was a compromise between the military and the political options. The military option, on the one hand, was the preference to obtain weapon systems directly from foreign leading suppliers, which was mainly a response to the acquisition of weapon systems by India's adversaries in the region, so as to maintain a qualitative military edge and to meet current defence requirements according to prevailing technological standards that were availed by the global arms market (Thomas, 1989:189). Since the military leaders had already acknowledged the implausibility of self-sufficiency in terms of autarky, they embraced the concept of self-reliance in as far as it guaranteed the consistency of defence supplies despite changes in the international political scenario (Arnett, 1994:344).

Moreover, the procurement of weapon systems had to ensure their adaptation to the special conditions of the Indian sub-continent, which was an assortment of the high altitudes of the Himalayas, the dust and heat of the Rajasthan desert, as well as the extraordinarily atmospheric Indian Ocean temperature. Nevertheless, the intention of military leaders had always been focussed on attaining state-of-the-art systems that would not only prove the country's armed forces technological superiority in the region, but also to conveniently compete with those of the developed world (Arnett, 1994:344–345). Therefore, Arnett (1994:345) maintains that it became obvious that in as much as they would have preferred to purchase weapon systems directly from the leading suppliers, domestic production was also indispensable in order to meet the specific requirements of the armed forces. Hence, licensed production or co-production arrangements promised to be the most viable option, in the long-term, to save foreign exchange reserves when compared to direct foreign purchases or the transfer of technological know-how, as well as the development and production of components and sub-systems indigenously.

On the other hand, Indian economists also based their arguments on the MiG-21 fighter aircraft project, which, according to Arnett (1994:345), initially became costly to produce in India, but subsequently proved to be cost-effective in terms of saving foreign exchange and in the development of the Indian aeronautical engineering industry. Furthermore, they indicated other advantages of licensed production and co-production arrangements, such as the dearth of technological hiccups, risks of obsolescence, cost overruns, or supply bottlenecks, which would have been overcome by the original suppliers. Moreover, they mentioned the ability to overcome the problem of time consumption as the process moves directly into production, thus bypassing the stages of designing and research and development, along with the evasion of external supplier interference through the withholding of spare parts within a co-production arrangement. As an example, they referred to the experiences of Pakistan with the United States arms embargo of 1960, whereby spare parts for the F-14 Starfighter, the F-86 Sabre combat planes and the M-47/48 Patton tanks were withheld by the latter (Thomas, 1989:193–194).

7.2.3 The Better Options towards Defence Procurement and the Politics of Choice

Therefore, the Indian arms procurement policy focussed its attention on licensed production of sophisticated weapon systems that were acknowledged to be too costly to design and develop

indigenously, or those systems that were expensive and politically costly to purchase directly from the leading suppliers (Thomas, 1989:193). Licensed production of foreign weapon systems was to be conducted along a diversified base of leading suppliers according to India's non-aligned stance. Amongst the reasons that the Indian decision-makers stated for a diversified supplier base and against a joint venture for instance with one of the leading suppliers, was firstly that the Soviet Union, as an example, had exercised technological export control over certain important components of the MiG-21, by forbidding the sale of spare parts to states such as Egypt, Iraq or Syria, which had large inventories of these aircraft (Thomas, 1989:196).

Moreover, Thomas (1989:196) maintains that the Indian authorities feared that the experiences of Egypt might also occur in their case, whereby the split in military co-operation would result in India being denied spare parts for the equipment purchased or granted by the Soviet Union. The United Kingdom and France, on the other hand, explicitly permitted India to re-export indigenously manufactured Jaguar spare parts and components in order to recoup the foreign exchange that was expended in order to meet the costs of the transaction. Nevertheless, these latter two suppliers were also treated with caution, as the United Kingdom, for example, had joined the United States in imposing an arms embargo after the 1965 conflict with Pakistan, which was ultimately lifted in 1975.

Secondly, the Indian decision-makers argued that the valuable technical experiences obtained through the licensed production of the Gnats from the United Kingdom, the maintenance and repair of other Western-made aircraft such as the Canberras, the Hunters, and the Mystères, as well as the similarities of technology between the Canberras and the Jaguars, would provide a concordant transition similar to the one from the MiG-21s to the MiG-23s (Thomas, 1989:196). In addition, Thomas (1989:196–197) assumes that India was disappointed by the performances of the Soviet Sukhoi Su-7B during the 1971 Indo-Pakistani War, which was believed to have been virtually obsolete when it was procured. Nonetheless, India still perceived the Soviet Union to be a reliable and dependable supplier, as India had experienced problems with military assistance from the United Kingdom regarding the manufacturing of engines for the indigenous HF-24 Marut fighter aircraft, which was unsatisfactory and performed poorly in the 1971 war. Furthermore, there was always the looming threat that Pakistan could influence Western opinion against the transfer of Western jet fighter technology to India, especially considering the United States' efforts to retain the prevailing military balance in the South Asian region.

What is very important to note is that the decision to acquire the Anglo-French Jaguar fighter aircraft was influenced by domestic as well as international political dynamics that were prevalent at the time, besides the economic or technological considerations that were influencing Indian economists or the military establishment respectively. The defeat of the Congress Party, which had upheld a more Soviet-inclined foreign policy, by the Janata Party in the March 1977 general elections, resulted in a shift in India's foreign policy stance. The Janata Party maintained that a true reflection of India's non-alignment stance was the pursuit of a more balanced foreign policy in the country's relations with the East and the West. This shift in foreign policy was made more apparent in the selection of suppliers for military hardware and technology, more specifically the selection of the Anglo-French Jaguar combat aircraft. This position, however, Thomas (1989:197–198) avers, had negative repercussions on the modernisation of India's armed forces, as the MiG-23 Flogger was relegated in the contest.

7.3 THE INDIAN DEFENCE INDUSTRY IN RETROSPECT

The production of armaments in India dates back to 1801 when the East India Company established the Gun Carriage Agency close to Calcutta, and during the colonial period little was done to expand such a capability. It was only in 1940 after the beginning of the Second World War that the United Kingdom established six ordnance factories in India as a response to Japanese militarism in Asia. Between 1942 and 1945, ten more ordnance factories were established, in addition to one clothing enterprise and an aircraft plant. With the cessation of hostilities after independence, the defence sector in India deteriorated as a consequence of the Nehru government's intention to expedite the country's economic development. The Nehru government focussed its attention on industrialisation along socialist central planning, as the country lacked the necessary capital to drive the industrialisation process. Priority was given to promoting the heavy machinery and intermediate goods industries that were directed towards meeting civil industrial needs, with the defence industry being accorded a low status as it was regarded to be non-productive (Matthews, 1989:407–408).

Moreover, the Nehru government was of the opinion that India should project a benign influence on world affairs in order to promote Gandhi's ideal of peaceful co-existence and to avoid being embroiled in costly arms races within the region. After the first Indo-Pakistan conflict of 1948, the inchoate defence industry was grudgingly revitalised to manufacture only those items that were

deemed to be essential and to guarantee as much as possible the cost-effectiveness of such production (Matthews, 1989:408). Arms production in India was therefore reinitiated in the 1960s as a response to conflicts with the PRC and Pakistan, the drive for regional hegemony, political sovereignty, and the intention to obtain technological progress. Licences and technology were obtained from the United Kingdom, the FRG, France and the Soviet Union to produce tanks, naval vessels and aircraft. Concentration was on attaining arms production technology from the suppliers, which was usually formalised in contracts, such as the acquisition of the United Kingdom's Vickers Chieftain Mk1 tank technology to build the indigenous Vijayanta tank (Krause, 1992:155–156).

Terhal (1982:254–255) indicates that the Indian governments had acknowledged the fact that the process of achieving a complete indigenous manufacturing capability will not be smooth, as several stages had to be surmounted sequentially before the ultimate capability could be achieved. Theoretically, first amongst these stages was the attainment of a licensing arrangement with a foreign enterprise to assemble a weapon system or defence-related equipment domestically from imported components. The second stage included the capability to manufacture some of the components domestically from imported components and finally manufacturing these systems and equipment entirely within India. However, it became obvious that the process of transferring technology, the manufacturing line, components and spare parts, as well as the payments for the licence would be very costly, and even exceed the foreign exchange costs of importing the same weapon system or defence equipment off-the-shelf. Therefore, Terhal (1982:255) avers that it was accordingly acknowledged that the process of overcoming dependence on foreign suppliers would be protracted and arduous.

7.3.1 The Evolution of Defence Production in India

The initial task of the Indian government during the 1949 to 1962 period was to maintain the sixteen ordnance factories that were inherited from the United Kingdom, which were responsible for the production of rifles and machine guns during the Second World War. In 1951 the government established an ordnance factory at Ambarnath to produce machine tools and prototype weapons (Graham, 1984:163). This arms-manufacturing capability, according to Graham (1984:167), was developed after the 1962 conflict with the PRC as well as the 1965 Kashmir war with Pakistan. Most of the armaments used in the 1962 conflict were received from the United States and the United Kingdom, and an arms embargo was imposed by both these states for the latter conflict.

After the 1962 conflict with the PRC, six additional ordnance industries were established, and the existing factories were augmented to double their output and also to focus their attention towards increased defence production, thus reducing civilian output from around 20 to approximately three percent.

Moreover, during the 1965 war with Pakistan, India became virtually self-sufficient in the production of small arms, thus being able to replace the arms and ammunition that were required during the war despite the existence of an arms embargo imposed by the United States and the United Kingdom. As a consequence, Graham (1984:167–168) maintains that India was not pressured to negotiate with Pakistan under perceivably unfavourable terms, as India demonstrated military superiority over Pakistan. Therefore, as from the period after independence, twelve other ordnance factories had been established, producing a wide array of defence equipment shorn of major weapon systems and sophisticated military hardware, except for the Vijayanta tank, which was produced by the Avadi Heavy Vehicles Factory near Madras.

Although India obtained most of its weapon systems from foreign leading suppliers, this preference, according to Thomas (1989:189–190), was mainly a response to the acquisition of weapon systems by its adversaries in the region. The intention was to maintain a qualitative military balance and to meet current defence requirements according to prevailing technological standards that were availed by the global arms market. Indigenous design, development, and production, on the other hand, was more slower and required long-term planning, with the omnipresent risk of obsolescence as a result of bottlenecks, qualitative advances in defence technological innovation, and drastic developments in defence requirements. The need to purchase weapon systems from the leading suppliers became obvious in the 1950s when India lacked the economic and technological bases for indigenous production, whereas during the same period Pakistan was acquiring advanced weapon systems from the United States as a consequence of its membership of the Southeast Asia Treaty Organisation (SEATO) and the Central Treaty Organisation (CENTO).

Consequently, the Indian defence industry became proficient to manufacture a wide range of advanced equipment through co-production arrangements and to generate purely indigenous designs, such as the Marut jet fighter aircraft (Pierre, 1982:222). A major part of India's independent indigenous production included small arms and ammunition, transport vehicles, bridge-laying equipment, building equipment, and coastal landing craft, along with a sustained effort to

design, develop and manufacture sophisticated systems such as combat aircraft, tanks, submarines and frigates. The ambition of the Indian leadership was to have an across-the-board defence manufacturing capability, regardless of the ability to meet international standards, in order to enable the state to be self-sufficient in all weapons categories (Thomas, 1989:199–200).

Sophisticated military hardware and major weapon systems were produced by eight defence public sector undertakings (Terhal, 1982:253–254; Graham, 1984:168), which mainly consisted of the Indian aeronautical industries, called the Hindustan Aeronautics Ltd (HAL) at Nasik, Koraput and Hyderabad. According to Frank (1969:141–142), HAL went as far as license-producing the Soviet MiG-21 interceptor air frames and their Atoll air-to-air missiles, and the British Folland-Hawker Siddeley Gnat tactical jet fighter aircraft after the United States had denied India the right to purchase the Lockheed F-104 as well as blocked the sale of comparable British and French aircraft because of their critical components. The second pillar of the defence public sector undertakings was the maritime industry, which produced frigates, patrol craft, survey ships, as well as other conversion and refurbishment projects. The maritime industry was situated in Bombay, Goa, Cochin and Calcutta, with the shipyard in Bombay commissioning the first indigenous Indian survey ship in 1964.

During the 1970s there was an explicit shift from indigenous production towards increased licensed production, starting from local assembly to certain components production and finally to virtual indigenous production. Therefore, instead of focussing on researching and developing new indigenous designs, Graham (1984:157–158) maintains that the industry emphasised the modification of imported designs. However, despite this shift, the defence industry was not adequately prepared to operate at full capacity, thus unit costs were significantly inflated and accordingly leading to expensive systems and equipment that could have been imported at low cost. Graham (1984:165) argues that the major cause of the shift from total self-reliance was the 1962 war with the PRC, which unveiled India's feebleness in terms of defence equipment and other military supplies. Moreover, it also demonstrated that Prime Minister Jawaharlal Nehru's reliance on diplomatic initiatives were insufficient to address serious external security threats. Subsequent to the 1962 war, the Indian élite called for the development of a puissant military force that would render India as a formidable power recognised by the PRC and other global powers.

There was an overwhelming consensus amongst the Indian political parties for the galvanisation of the country's resources towards providing for the requirements of the military establishment, thus resulting in a doubled defence budget and the expansion of the defence industry. Moreover, the ensuing incessant increase in the defence budget assumed a character of being incontestable and not being deliberated upon within Parliament, particularly after the establishment of the Department of Defence Production under the Ministry of Defence in November 1962 (Graham, 1984:165). Consequently, defence expenditure averaged around three percent of the GDP per annum during the early 1980s, and increasing to 5.5 percent in the late 1980s, thus accounting for approximately 20 percent of the total government outlays, as well as 32 percent of unforeseen expenses within the auspices of Non-Planned Expenditure (Matthews, 1989:405).

The inhibition of the role of Parliament to analyse the defence budget in detail was also ensured by rigid security legislation, which also even prohibited or discouraged retired military officers or former bureaucrats from publicly reviewing sensitive defence aspects. Notwithstanding these structural limitations, Parliament however had a substantial impact on the location of the defence industrial plants within their preferred districts or constituencies. Furthermore, it had a strong influence on the issues relating to the linkages between the public and private sectors in the sphere of defence, whereby the Industrial Resolution Policy of 1948 and 1956 designated all defence industries as exclusive domains of the state. Parliament had consistently upheld this policy despite several initiatives to the contrary (Graham, 1984:178–179).

Graham (1984:180–181) asserts that major policy decisions regarding the defence industry were often initiated by the Prime Minister based on politico-strategic considerations rather than the day-to-day economic operations of the individual firms, a consistent evaluation of their technical competency, or as a response to perceived military threats. These latter considerations were handled by the inter-ministerial Cabinet Committee on Political Affairs that made the final decisions on operational policy and the budget, and its efforts were complemented by the Defence Minister's Production Committee and the Research and Development Council. The Department of Defence Production wielded less power compared to the armed Services in terms of influencing the operational policy of the defence industry, hence there were problems of interference, subsequent delays, and a lack of accomplishment with several advanced indigenous development projects. In most cases, decision-making was circumscribed by the intervention of the armed Services, as they wielded more power than the Ministry of Defence concerning the operations of the defence industry.

However, the broader economic considerations were overlooked due to the closed nature of the system, which also prohibited outside expertise and experience to induce pragmatic planning into the process (Graham, 1984:181).

From 1972 onwards, the focus of the Indian defence industry was on attempting to develop more sophisticated items, particularly in the sphere of electronics, which was supported by a ten-year research and development commitment and the acquisition of foreign technology in order to overcome the overly ambitious local design attempts. These efforts were mainly driven by the realisation that the objective of total self-sufficiency was infeasible in the short-term, and consequently emphasis was on obtaining foreign technology through licensing arrangements. This shift in thinking was also accompanied by the development of the capability to meet the armed forces' requirements through the production of sufficient equipment, such as the Vijayanta tank, whose production was expanded to reach its planned schedules of 100Xtanks per annum. Nonetheless, despite the expanded production schedules, the indigenous production of tanks was inadequate to meet all the country's needs, and accordingly over five hundred tanks were imported from 1973 to 1981 (Graham, 1984:174). Subsequently, in the mid-1980s, the Indian government shifted its attention towards blending the efforts of the public defence sector with those of the private firms.

According to Matthews (1989:418), considerations for economic and technological development appeared to be uppermost in the Indian government's initiatives towards sponsoring the integration of the private sector into defence-related processes in the mid-1980s. Although these goals were not entirely focussed on the promotion of trivial provincial industry parks, they were rather centred towards having the military being a fomenter of advanced development programmes on a wider scale. Nevertheless, these initiatives also had considerations for regional location, so as to ensure the diffusion of the defence plants throughout the country, which was based on both political and economic considerations: to upgrade the least developed districts and remote regions of the country. Consequently, two birds were struck with one stone by generating employment through the creation of industrial activity in remarkably backward areas, which also insinuated the advancement of infrastructure and transportation systems for inaccessible and desolate regions.

7.3.2 The Current State of the Indian Defence Industry

The Indian defence industry currently consists of thirty-six ordnance factories, which cater exclusively for the needs of the military, particularly the army; eight public sector undertakings; and forty major research and development institutions (Gupta, 1990:846). In its entirety, the defence industry comprises the second largest organisation in the country's industrial economy after the railways, producing around ten to fifteen percent of India's industrial output. The defence industry is also the largest amongst the emerging arms supplier states in terms of volume, value, as well as the diversity of production and the research and development faculties (Matthews, 1989:412). Moreover, it is also larger than those of the secondary leading supplier states in the Western world (Arnett, 1994:344).

Forty-four percent of all the goods and services produced by the defence industry emanate from the thirty-six ordnance factories, which were mainly concerned with manufacturing wares for the military, and most particularly for the army (Matthews, 1989:412). The ordnance factories employ approximately 59 percent of all the defence industry's work force, and also receive half of the capital and loans that were provided by the government to the defence industry. Besides the production of unsophisticated equipment such as ammunition and uniforms, these factories also transcend into the production of trucks, armoured personnel carriers, missile systems and tanks. As far as diversification towards the civilian production is concerned, these factories' civilian output is estimated at only four percent of all production (Graham, 1984:157–158). The major problem that affected most of the ordnance factories, according to Graham (1984:176), were the generic-planning processes that could not overcome the incessant production of similar wares that were no longer substantial. The consequent quagmire was that over-capacity became the norm rather than the exception.

Graham (1984:159) maintains that fifty percent of all production from the Indian defence industry is accounted for by the defence public sector undertakings, which constitute the second pillar of the Indian defence industry, employing thirty-three percent of the workers, and receiving less than half of government loans and capital. These undertakings are responsible for the production of the most advanced items such as aircraft, helicopters, missile systems, electronic systems and other defence-related equipment, as well as a vast array of naval vessels (see Table 7.1 below). Furthermore, these undertakings produce a large amount of goods and services for the civilian market, which are

estimated to be around half of their total production and consisting, for example, of railway coaches and earth-moving equipment (Graham, 1984:159). The growing importance of the defence public sector undertakings *vis-à-vis* the ordnance factories is with regard to the increasing complexity, sophistication and costs of their operations, particularly since they also cater for the maritime and aerospace sectors of both the military and civilian markets (Matthews, 1989:412). With the ongoing intention to synthesise the interests of the military and those of the industrial sector since the 1980s, Matthews (1989:418) maintains that the defence public sector undertakings took the initiative to establishing ancillary and small-scale sub-contractors for the supply of parts, components, and sub-systems.

Table 7.1: Defence Public Sector Undertakings

FIRM	SECTOR	LOCATION	OPERATIONS
Bharat Earth Movers Ltd. (BEML)	Earth-moving equipment	Bangalore, Kolar Gold Fields and Mysore	Earth-moving equipment and broad gauge integral railroad coaches
Bharat Electronics Ltd. (BEL)	Electronic systems and equipment	Bangalore, Ghaziabad, Pune and Machilipatnam	Radar and communication equipment for the military and electronic appliances for the civilian sector
Bharat Dynamics Ltd. (BDL)	Missile systems	Hyderabad	Various missile systems, launchers and missiles
Mazagon Dock Ltd. (MDL)	Naval vessels	Bombay and Cochin	Naval vessels, commercial ships, oil-drilling platforms, aircraft carriers and oil tankers for the Indian Shipping Corporation
Garden Reach Shipbuilders and Engineers Ltd. (GRSandE)	Naval vessels	Calcutta, Ranchi and Nagpur	Naval vessels, commercial ships, dredges, diesel engines and tube wells
Goa Shipyard Ltd. (GSL) or Vasco Da Gama Shipyard	Naval vessels	Goa	Naval vessels, commercial ships, barges and trawlers
Hindustan Aeronautics Ltd. (HAL)	Aeronautics	Bangalore, Nasik, Koraput and Hyderabad	Aircraft, helicopters, and aeronautic-related equipment including avionics, engines, instruments, and accessories
Mishra Dhatu Nigam Ltd. (MDNL)	Metal Processing		High-technology metal-processing factory

Sources: Anthony, I. (1990). **The Naval Arms Trade**. New York: SIPRI, Oxford University, pp. 135 – 136; Graham, Thomas W. (1984). "India". In Katz, James Everett. (Ed.). **Arms Production in Developing Countries: An Analysis of Decision Making**. Lexington, Massachusetts and Toronto: Lexington, pp. 159; 176 – 177; Frank, L. A. (1969). **The Arms Trade in International**

Relations. New York: Frederick A. Praeger, pp. 141 – 142; Thomas, Raju G. C. (1986). **Indian Security Policy**. Princeton, New Jersey: Princeton University, pp. 166 – 167; Matthews, R. G. (1989). "The Development of India's Defence Industrial Base". **Journal of Strategic Studies**. Vol. 12, No. 4. pp. 405 – 430, pp. 414 – 415.

Besides the ordnance factories and the defence public sector undertakings, India has forty-seven major research, development and prototyping institutions (Arnett, 1994:345) that are under the direct supervision of the Science Adviser to the Minister of Defence. These institutions are exclusively obsessed with defence research on a wide array of aspects ranging from chemistry, metallurgy, ballistics, aeronautical design and development, as well as electronic systems. The Defence Research and Development Organisation (DRDO), which was established in 1958, also co-ordinates defence research with each ordnance factory and public sector undertaking, as well as with other public and private institutions such as universities and private enterprises. Defence research comprises approximately 17 percent of total research that is funded by the government and it also constituted two percent of the defence budget. When Indian space and nuclear programmes are considered, the government contributes approximately 50 percent to defence-related research and development (Graham, 1984:159–161).

The DRDO became the local science and technology base to accommodate the diffusion of know-how through collaborative defence programmes, as it had amalgamated the Defence Science Organisation and the Technical Development Establishment during its inauguration in 1958 (Matthews, 1989:422). Forty-seven defence establishments and laboratories, with more than 6 000 scientists and technologists as well as 10 000 technicians, were placed under its supervision, which were dispersed throughout the country and operating within comprehensive scientific and technological fields (Arnett, 1994:345–346). The DRDO therefore is the hub of research and development for the ordnance factories that lack an in-house capability, and also minimally for the defence public sector undertakings, especially in the technical improvement of their techniques and systems. Nevertheless, despite its vast operations, the DRDO is not sufficiently funded through the defence budget, as it only obtained one percent in the 1960s, rising to two percent in the mid-1970s, and 5.15 percent in 1988 to 1989. These increases towards the late 1980s reflected a forceful drive in the direction of indigenous research, development and production, most particularly to develop advanced aerospace and electronic systems and equipment (Matthews, 1989:422–423).

Most of the difficulties that were experienced by the DRDO in achieving successes with highly advanced indigenous programmes such as the Light Combat Aircraft (LCA), the Advanced Light

Helicopter (ALH), the Arjun main battle tank, as well as the relatively successful Integrated Guided Missile Development Programme (IGMP), were debatably based on the failure towards systems integration. The argument was that the failure to integrate the various components and sub-systems within locally developed platforms stemmed from the country's bureaucratic culture, which was unwilling to adapt to new and changing conditions, or from a rigid national culture, which was undoubtedly difficult to transfigure. Bureaucratic cultures were obviously similar in state organisations globally, but were, nonetheless, also reliant on each country's specific political and national culture (Arnett, 1994:355).

Within India, in this context, this culture is characterised by strong Hindu values that were accompanied by a secular democratic parliamentary system that can closely question the activities of the DRDO. However, Arnett (1994:355–356) argues that strong Hindu values proscribed Parliament's capacity to do so on the grounds that the DRDO was often led by unfettered personalities, which was characteristic of the organisation since the country's independence. Consequently, scientific practice in India became infested with bureaucratic inflexibility in planning, a proclivity towards import substitution rather than hoisting the country's international competitiveness, as well as political manipulation of the research programme instead of permitting close co-operation and co-ordination between the government and the defence industry. The effects also of the Hindu caste system had often influenced the direction of certain higher classes that had access to higher scientific education to abhor scientific education and career prospects in this direction. However, the success of Indian scientists and engineers within Western defence industrial sectors became apparent proof that most of the problems of Indian defence production were rooted in institutional rather than Hindu religious or cultural practices.

7.3.3 The Indian Defence Industry's Collaboration with Other Suppliers

The main role player in collaborative arrangements with the Indian defence industry was the Soviet Union, particularly in developing India's defence technological production base (Graham, 1984:173), which was a relationship that began in December 1963 with the signing of a trade agreement to increase India's total foreign trade by 16 percent towards 1964. By 1970, the Soviet Union was India's largest trading partner, also providing more than 50 percent of the country's military hardware (Husain, 1986:29–30). Essentially, India benefited from the terms of payment that were arranged with the Soviet Union, which included the local Indian currency and bartered

goods, thus permitting for the accrual of advanced technologies and expanded facilities without the consumption of the country restricted foreign exchange (Graham, 1984:173).

Besides HAL benefiting, the various shipyards and other public sector undertakings as well as the ordnance factories also prospered from such arrangements (Graham, 1984:173). For instance for the procurement of a Soviet MiG-27 aircraft, India had to pay a quarter of the price that it had to pay for a French Mirage 2000 aircraft, whilst both aircraft had comparable performance capabilities. Moreover, Soviet interest rates were consistent on a 2.5 percent level over a 17-year period that was followed by a seven-year grace period, of which with Western suppliers the credit periods were 10 to 15 years without a grace period and also had to be paid in foreign currency (Matthews, 1989:411). Furthermore, the Soviet Union was even prepared to accept payments in commodities, thus allowing India to accumulate a substantial arsenal without weakening its financial position (Gupta, 1990:855–856).

Rather than focussing on the economic benefits of this relationship, the primary motivating factors were the politico-strategic considerations that were mutually beneficial for both parties. On the one hand, India primarily coveted the Soviet Union's veto in the United Nations Security Council on the disputed Jammu and Kashmir regions against Pakistan; and secondarily for the Soviet Union to buttress the country's Five-Year Plans. After securing the Soviet Union's support on the Jammu and Kashmir dispute, India also required the Soviet Union to counter-balance the PRC after the Sino-Indian contradictions became salient in 1959. On the other hand, the Soviet Union was interested in gaining India's assistance to break out of the Western strategic naval encirclement. The politico-strategic convergence was to form the basis of a strong relationship that was cemented by India's procurement of 24XIlyushin Il-14 transport aircraft and 26XMil Mi-4 and Mi-8 helicopters from the Soviet Union in the early 1960s. This arrangement was closely followed by an agreement to license-manufacture 100XMiG-21 fighter aircraft in India, as well as multitudes of naval vessels and their support and combat systems (Husain, 1986:30–31).

Despite the failures and the limited successes with the local aircraft projects, Graham (1984:172–173) claims that India recorded a successful project with the Soviet MiG-21 fighter aircraft. The major problem with the MiG-21 project was its detrimental effect on the country's foreign exchange, as the costs of its imported components were estimated in 1972 to be more than those of directly imported aircraft. Nonetheless, the project hoisted HAL's approach to design and

production, as a phased strategy towards the assimilation of technology was adopted, resulting in a continual upgrading of the firm's technological faculty. With the three successive MiG-21 models being built in India, there was a 20 percent modification amongst the various versions, thus allowing a broader technological base that gradually absorbed new technologies. One other problem that India had to contend with was the restrictions imposed by the contract prohibiting the re-transfer of MiG-21 parts and components to states that were not approved by the Soviet Union, such as Egypt. Moreover, in certain instances the Soviet Union was rather slow in the delivery of some of the MiG-21 components, which often resulted in unnecessary delays in the production schedules.

Besides the fact that HAL had produced the MiG-21 for more than 20 years, and had also began license-manufacturing the MiG-27 fighter aircraft, it still had to import the key components of both these aircraft from the original supplier (Gupta, 1990:853). An important negative consequence of the Soviet connection, however, according to Gupta (1990:856), was the fact that the Soviet Union inadvertently discouraged the advancement of the Indian defence industry, as it always provided a second option for foiled indigenous projects. Presumably, if the Soviet option did not exist, perhaps the Indian defence industry would have managed to accomplish a certain level of self-sufficiency being compelled by pressure to preserve its foreign currency reserves as well as galvanising more local resources towards prioritising the success of the indigenous defence production base. Thus, the existence of an alternative source for advanced defence technologies became an impediment to the quest for self-sufficiency in arms development and production, although the acknowledgement of the costs of such an endeavour can not be overlooked. Nevertheless, wherein the Indian defence industry was pressured and was politically propped and succoured to pursue self-sufficiency, its defence research and development faculties were able to provide the required wares (Gupta, 1990:856).

Politico-strategic differences also emerged between India and the Soviet Union over the intention of the latter to obtain the endorsement of the former on the Asian Collective Security arrangement, which India rejected on the basis that it was apparently anti-Chinese and accordingly placed India as part of the Soviet camp. Moreover, Gupta (1994:113–114) maintains that India felt that by sanctioning the proposal, it would compromise its non-aligned status, as the Soviet Union was eager to attain a naval base in the Andaman Islands or at Vishakhapatnam. Consequent to India's refusal to these Soviet proposals, it was denied by the Soviet Union access to certain weapon systems and

was subsequently cornered by foreign currency shortages from procuring weapon systems from the leading Western suppliers.

However, after the foreign currency problems were overcome with an improved economic situation in the late 1970s, India was permitted to procure the Jaguar and the Harrier combat aircraft from the United Kingdom, and also to purchase and license-produce the HDW submarines from the FRG. Moreover, in the mid-1980s India was enabled to procure 40XMirage 2000 fighter aircraft from France and 1500Xhowitzers from Sweden, both for approximately US$2 billion. These augmented military contracts with the Western suppliers were perceived by the Soviet Union as threatening its strong position within the Indian defence market, and accordingly offered new and favourable terms for India to purchase its own wares. These offers were also prompted by the invasion of Afghanistan, whereby the Soviet Union solicited the support and encouragement of India, as a non-aligned state, in its new venture into South Asia (Gupta, 1994:114–115).

What is also important to note, according to Gupta (1994:115), is that the Soviet Union made such offers during a period when all the leading suppliers had reversed the policy to supply weapon systems through security or military assistance programmes, except towards a few vital states such as Israel and South Korea for the United States, as well as Cuba, Syria and Vietnam for the Soviet Union. The Soviet Union offered India 700XT-72 main battle tanks, of which 600 were to be license-produced along with 1000XBMP-2 infantry combat vehicles, as well as eight diesel-powered submarines that supplemented two others that were purchased from the FRG. Actually, the arsenal that India received from the Soviet Union preceded and even surpassed the transfer of weapon systems to other Warsaw Pact states.

India also secured collaboration with the United States during its contest with the PRC over the South Asian regional power status. India had relied on the support of the Soviet Union to eject the PRC from the South Asian region in 1962, when the PRC overtly claimed to be a South Asian regional power and declared a dispute over several territories with India. After the Soviet Union failed to respond, India turned to the United States for military assistance with weapon systems for mountain warfare. After India had offered bases for the US Air Force following the 1962 Sino-Indian conflict, it was provided by the United States with radar and communication equipment worth US$82 million. Other equipment that was promised by the United States under the auspices

of India's First Defence Plan for the period 1964 to 1969, which was estimated at US$500 million, was not delivered due to the imposition of an arms embargo. In 1963, India was provided by the United States with a loan of US$80 million to establish its first nuclear power station at Tarapur after Prime Minister Nehru had promised not to develop atomic weapons (Husain, 1986:31; 35).

However, following the 1998 underground nuclear tests, the modest technical co-operation between India and the United States was terminated, which Arnett (1999:384–385) argues, insinuated the disruption of some of the indigenous projects such as the LCA, the ALH, and advanced electronics systems that were pursued in collaboration with certain United States' firms. Nevertheless, the Indian government had anticipated such responses from the United States, hence it provided adequate funding for the DRDO to make India less vulnerable to undependable suppliers as well as to pursue the participation of other suppliers such as France, Russia and Israel or to directly import complete systems. Accordingly, after the 1998 nuclear tests, India and Russia signed a ten-year arms supply arrangement, which was approximated at US$8 billion, and the Indian government also increased defence research and development expenditure by 30 percent.

According to Graham (1984:170–171), India had signed an agreement in 1959 with the United Kingdom for the indigenous assembly of the Hawker Siddeley HS-748 Avro transport aircraft, which also included the importation of electronics, engines and undercarriages, with the airframe being manufactured in India. However, the poor performance capabilities of the aircraft led to the manufacture of only seventy-nine units that could not be exported or transferred to the civilian market, thus resulting in a huge financial loss for the Indian defence industry. Another fighter aircraft project, the HF-24 Marut, whose design began in 1956, was flight tested in March 1961. Since the intention was to produce a supersonic fighter aircraft, an indigenous engine was envisaged to be developed during the second phase of production. However, an indigenous engine or the supersonic speed were never accomplished despite several attempts to install imported engines from the United Kingdom, the Soviet Union, the FRG, Spain and Egypt.

Other projects like the Gnat and the HTJ-16 Kiran Mark I and II were met with limited successes. The Gnat light jet fighter project, on the one hand, was initiated in 1956 in collaboration with Folland and Bristol-Siddeley of the United Kingdom. The Gnat became an efficacious weapon during the 1965 war with Pakistan, and in 1966 more orders for the aircraft were sanctioned leading to the production of 214Xplanes, thus allowing HAL to accomplish economies of scale.

Approximately 60 percent of the engine and 85 percent of the airframe were indigenously produced by 1971, resulting in the production of a modified Gnat Mark II fighter aircraft in 1972, renamed the Ajeet. The first model of the Ajeet was delivered in 1976 and towards 1982 more than eighty aircraft had been produced, although the air force was not satisfied with the longitudinal control and the Identification Friend or Foe (IFF) systems of the aircraft (Graham, 1984:171–172).

On the other hand, Graham (1984:172) maintains that the Kiran jet trainer aircraft was designed in India and began its first flight in 1964, after the aircraft was fitted with electronics systems from Marconi and the Viper II engine from Rolls-Royce-Bristol, both being firms from the United Kingdom. Although the Kiran aircraft was moderately effective, it also required constant repairs that consistently removed it from service, and accordingly had to be supplemented by other imported jet trainer aircraft. Nevertheless, another version (Mark II) of the Kiran was approved at a unit cost of approximately US$3 million (Graham, 1984:172).

7.3.4 Challenges and Accomplishments of the Indian Defence Industry

During the period from 1963 to 1971, the defence public sector undertakings experienced problems in meeting their targets in the production of tanks, aircraft and naval vessels, due to several reasons. First, was the necessary dependence on assembling foreign components, whose delay in delivery hampered or severed the production schedules. Secondly, civilian leaders instituted overly ambitious programmes whose targets were not easily met due to an ineffective research and development base as well as the inability to sub-contract domestically. Thirdly, for Indian defence production planners, success was defined as the capacity to produce equipment using domestic components, labour and technology, which resulted in the establishment of a rigid system of evaluation. The consequence, however, was the attempt by indigenous firms to develop extremely sophisticated systems and equipment despite the non-existence of an adequate technological base and the subsequent diminishing returns. Furthermore, the defence industry was often pressured to modify and improve on imported sophisticated technologies without sufficient resources, thus impelling them to drastically shift towards producing new items without the necessary incremental improvements. This tendency, according to Graham (1984:166–167), was mostly characteristic of the aircraft industry.

Although it was commendable to pursue such ambitious programmes in order to achieve rapid technological advancement, it also had a damaging effect on the entire defence industry, most particularly the tendency to condone the pursuit of unrealistic targets, which has hitherto been characteristic of Indian defence production. On several instances, the defence industry conceded to political and military pressure to produce state-of-the-art systems whilst acknowledging the fact that it lacked the competence to do so. Consequently, such projects would be initiated for an uncertain period until they were suspended or postponed due to insufficient funding or the project inevitably became an indigenously conceived platform or system consisting of several foreign components and sub-systems (Gupta, 1990:849).

The main factor was the political drive towards self-sufficiency and self-reliance that however limited the country's receptivity towards innovation and advancement. For example, Arnett (1994:356–357) argues that the failure to achieve an across-the-board import substitution was a tribute to a justifiably erroneous ideological proclivity towards technological transfers that however hindered local innovation and co-development with foreign assistance. The attitude of the political leadership was that India would not be pressured by foreign forces that were perceived to be conceited, insincere, and inclined towards circumscribing India its appropriate rank in the global hierarchical state system. The major problem that beset the Indian defence industry, according to Graham (1984:168–169), was the dearth of materials that were necessary for the successful production of advanced military equipment, such as specific metals, like special steel and high-technology electronic systems and equipment, which were unavailable in the civilian economy. The main reason for the dearth of such metals and high-technology items was that they were not in demand in the civilian sector, and as such became entirely a requirement of the defence sector.

Moreover, the reluctance of the Indian leadership to outsource the so-called strategic sectors of the economy to the private sector, as well as the incapacity to provide sufficient incentives for the private sector to shift into drastically novel spheres of production, became a handicap to the qualitative expansion of the Indian defence industry (Graham, 1984:169). From these bases, therefore, it could be safely concluded that a military-industrial complex was non-existent in India, although the output of the defence industry, particularly the defence public sector undertakings, was integrally connected to the civil sector. The civil market provided an essential outlet for the defence industry during peacetime and accordingly affording it with strategic planning over the long-term (Matthews, 1989:416–417). Nevertheless, despite the willingness of the private sector to move into

such joint-ventures with the state-owned defence enterprises, India lacked an adequate risk capital sector to engage in large production contracts for the defence establishment, and accordingly the forward and backward linkages between the defence industry and the domestic economy were not sufficiently established (Graham, 1984:169).

Instead the relationship was a one-way street, with most of the economic activity being initiated from the defence establishment towards the private sector, with trade towards the opposite direction being severely constrained by political and economic reasons arising from the government (Matthews, 1989:417). The government was weary of the development of huge private sector engineering concerns that due to the profit motive would not focus towards providing the country with a potent defence capability (Gupta, 1990:847). Moreover, the government feared that such motives might develop vested interests in defence production, which could pursue the expansion of the defence establishment by influencing the adoption of aggressive foreign and security policies. Nevertheless, the basis of the establishment of the Indian defence industry had always been along socialist principles, which emphasised the essentiality of public ownership of strategic industries (Matthews, 1989:417).

Hence the Indian economy had a limited economic multiplier, which could benefit the entire economy and offset the higher unit costs of weapon systems and defence-related equipment. Indeed, the Indian economy became more of a dual economy rather than converting the defence industry to become a leading technological sector as it was envisaged to be by the country's leadership (Graham, 1984:169). Close to ten percent of the country's defence budget was consumed on foreign exchange by the defence industry in importing manufacturing machinery and equipment. The most affected sector was the aeronautics industry, particularly HAL, which had to postpone some of its projects due to an insufficient research and development capacity, unrealistic targets, and a dismal response from foreign suppliers for indispensable components. Hence the radical shift from emphasis on entirely indigenous production of aircraft that was characteristic of the 1950s towards the improvement and variation of imported technology and the focus on initiating less complex projects such as trainer and transport aircraft (Graham, 1984:169–170).

In April 1987, acknowledging the existence of these problems, the Indian government announced initiatives regarding the elimination of inefficiencies relating to public control of the defence industry, which were nonetheless in line with the policies aimed at the liberalisation of the economy.

For the first time, the indigenously developed Arjun main battle tank, which was initiated in 1974, was envisaged to be powered with an autochthonous diesel engine developed by the Kirloskars private firm. It was further announced in July 1987 that 50 percent of the systems and sub-systems that were to be utilised in the local production of the Soviet T-72 main battle tanks and the BMP infantry combat vehicles would be produced by Indian private sector firms (Matthews, 1989:417). However, the indigenously developed diesel engine to power the Arjun main battle tank proved to be inadequate as it lacked the 1 300 to 1 500 horsepower that was required, with the domestic private concern only managing to produce a 500 horsepower diesel engine that lacked a turbocharger. Even after the engine was provided with a turbocharger, it failed to meet the desired performance, thus the Combat Vehicle Research and Development Establishment (CVRDE) had to conveniently opt for an imported MTU engine to begin the production of the Arjun in 1991 (Gupta, 1990:850).

In order to meet the backlog for the procurement of main battle tanks, the Indian government entered into a licensed production arrangement for the T-72S and the T-80U tanks with the Soviet government (Gupta, 1990:851), as the Indian defence industry was already license-producing the T-72M1 tanks from the Soviet Union. The CVRDE was still developing an indigenous engine and fire control system for the Arjun main battle tank, which could make it to be 75 percent indigenously-produced, as it was still relying fifty percent on German components alone. Besides the concerns about the weight and the width of the tank, the German engine was reputed to be overheating in the Rajasthan desert conditions, which was an attribute of the weight of the tank rather than a deficiency of German technology. Nevertheless, the success of the Arjun would have demonstrated India's ability to develop its own indigenous systems and sub-systems that would also improve its status as an arms producing and supplier state (Arnett, 1994:348–349).

One other problem area which affected the capability of the Indian defence industry was to produce an indigenous fighter aircraft, as problems were encountered with the HF-24 Marut, its successor the HF-25, and lately the Light Combat Aircraft (LCA), which was initiated in 1980 (Matthews, 1989:424). Problems with the LCA were encountered during it's initial design and development phases, since it was conceived as a 200-km range fighter aircraft to ensure battlefield superiority, particularly to undertake ground attack tasks, within the tropical climate of the South Asian region. However, the success of the project was circumscribed by the inability to install indigenously developed components, leading to the involvement of foreign firms in the development of the

project (Gupta, 1990:851). Electronic systems were to be provided by Martin Marietta of the United States, Ericsson of Sweden, Dassault of France, and Allied Signal of the United States, and the General Electric engine was to be supported with components supplied by Northrop and British Aerospace, thus becoming dependent on three leading and one primary emerging supplier states (Arnett, 1994:349–350).

Secondly, the Indian Air Force demanded a beyond-visual-range capability to be installed on the aircraft, which increased its weight from 8–10 tons to 12.5 tons, as well as impelled the inclusion of a pulse Doppler radar system for which HAL sought the help of Ericsson of Sweden to co-develop. Nevertheless, despite foreign participation within the LCA project, research, development and production costs were escalating tremendously, such that the envisaged 400Xaircraft to be produced for the Indian Air Force were anticipated to result in an enormous cost per unit unless perhaps an export market was secured, which seemed rather implausible (Gupta, 1990:852) considering the tribulations that the project was going through.

Thirdly, it became obvious that the project could not be completed within the predicted period, to wit, of having the prototype flying by 1990 and the first delivery of the aircraft to the air force by 1994. Most observations forecasted the aircraft to be delivered towards the end of the millennium or during the early years of the twenty-first century. Finally, it also became apparent that the technology to be employed on the LCA would be of the 1970s or the early 1980s vintage, thus implying that by the time it would be deployed with the Indian Air Force, it would be using 20-year old technology (Gupta, 1990:852). By 1994, more than US$600 million had been spent on the project and most of the industry observers expected the LCA to begin initial production in 2005, rather than the delivery in 2001, which was predicted by the DRDO (Arnett, 1994:349–350).

Notwithstanding, India and Taiwan were the only developing countries that had continuing supersonic combat aircraft programmes globally, since it was difficult for virtually all other developing countries to launch indigenous state-of-the-art fighter aircraft programmes (Gupta, 1994:111). The procurement of 230XMiG-29 fighter aircraft from the Soviet Union to be license-produced by HAL in the late 1980s, and adding these to the approximately 160XMiG-27 fighter aircraft that HAL was already license manufacturing to replace the 20XMiG-21 fighter squadrons, implied that the LCA would not be appropriately accommodated within the air force. Economic and

technological logic could impel the Indian government to consider the prolongation of the production of the MiG-27s or the MiG-29s for the air force, which would be at a fraction of the cost of procuring virtually outdated units of the LCA programme (Gupta, 1990:852).

Similar problems were also encountered with the indigenous Advanced Light Helicopter (ALH) project, which was pursued as a co-production arrangement with Aerospatiale of France in 1971 in order to design a single-engine helicopter whose maiden flight was envisaged for 1982. However, in 1977, the Indian Air Force pressured the government to convert the ALH into a twin-engine aircraft despite the fact that HAL had almost completed the single-engine design. Consequently, the contract with Aerospatiale was terminated in 1981 with a loss of approximately US$4 million in cancellation fees, as well as the dissolution of the single-engine design on which a lot of national resources had been invested. Subsequently, in 1984, the Indian government concluded a seven-year contract with MBB of the FRG to begin a new project from the start, which however was unsuccessful as a result of contradictions with HAL over the technical specifications of the helicopter. Ultimately, the Indian government opted for the procurement of Mil Mi-25 helicopters from the Soviet Union in order to compensate for the backlog in the ALH project, which observers believed was virtually obsolete by the time it was to be produced in 1991 (Gupta, 1990:850). Actually the prototype, which was intended to incorporate the ability to survive crashes and be very light in weight, was reputed to be lacking such special features (Matthews, 1989:424).

Unlike the other indigenous weapon programmes, the Integrated Guided Missile Development Programme (IGMP) was successful in that despite the restrictions on obtaining the technology for the ballistic missile systems as a result of the Missile Technology Control Regime (MTCR), India fully supported the scientific and technological base to develop these systems. Secondly, the programme became an integrated venture utilising to a large extent indigenous technologies, components and sub-systems, thus averting duplication and saving time that with regard to other weapon systems was wasted on seeking foreign collaboration. Thirdly, the domestic scientific and technological base was integrated with the private sector and the educational institutions by the DRDO in developing the IGMP project. Fourthly, the programme became manageable when compared to the other weapon projects, since the development of a supersonic fighter was often beyond the capabilities of most developing countries, whereas more than twenty developing states had accomplished ballistic missile programmes. Therefore, the ballistic missile programme was not a project that was over-ambitious on the country's research and development capabilities. Actually,

it was a clear indication that the Indian defence industry had the potential to meet realistic targets if it had the support and encouragement of the political leadership and the armed Services (Gupta, 1990:856–857).

The inadequacy of the other projects was therefore not with the ability of the Indian scientific community to produce advanced weapon systems, but with the inability to conduct systems integration. High-quality theoretical research was a clear attribute of the Indian scientific community in addition to their proficiency at developing modern components and producing uncomplicated prototypes of modern weapon systems. However, to blend these components and sub-systems in concert proved to be less impressive, firstly due to the dearth of proper project management capabilities that could guarantee fixed design requirements that Indian scientific and engineering designers could work towards accomplishing. Secondly, was the need to provide sufficient resources to the sanctioned projects and being able to prioritise between those competing for limited resources. In most instances funding for indigenous projects was overtaken by the armed Services' pressures to procure foreign items, thus diverting the financial resources that could have been directed towards indigenous research and development (Arnett, 1994:352–353).

Moreover, according to Arnett (1994:353–354), Indian military planners focussed their attention on the procurement of new platforms rather than following the global trend of fitting advanced command and control equipment, sophisticated electronic warfare systems and smart weapons on older platforms so as to extend their life whilst improving on their capabilities. In this context, therefore, the weakness of locally developed platforms could be overcome. Finally, military research and development should have been blended with government-sponsored industrial or non-military research, as well as complementing these with private sector research and development.

As an emerging arms producer and a prospective supplier in the domain of arms transfers, Matthews (1989:419–420) argues that India was regarded to have an enormous capacity to produce defence wares within the developing world, particularly when considering those industries that were associated with arms production. Amongst these were the faculties for engineering, iron and steel, non-ferrous metals, metal products, electrical and non-electrical machinery, shipbuilding and repair, as well as transportation equipment and systems. According to Matthews (1989:420), India also had a high potential to produce armaments as a consequence of its previous policies that emphasised the

establishment and promotion of the capacity to develop capital goods, such as the iron and steel industry, which became one of the largest operations in the developing world.

Consequently, the country became self-sufficient in the production of various metals, including specialised steels, which were essential for machinery manufacturing. Besides, India was progressing rapidly in the spheres of computer-controlled machine tools, the electrical machinery industry, and electronics, especially telecommunications and computerisation. The production of electronic systems and equipment for the aerospace and other defence sectors was developing rapidly through the HAL and BEL defence public sector undertakings (Matthews, 1989:420–421). Hence, Gupta (1994:111) avers that India is one of the few emerging arms producing states to produce weapon systems across-the-board, despite the obvious fact that most of these weapon systems are predominantly reliant on foreign components for their successful employment.

Accordingly, India was unable to achieve complete self-sufficiency in arms production as a result of its incessant reliance on imported components and sophisticated materials and items that could not be produced locally. The failure to aggregate civil industrial capacity and defence demand was a handicap to India's drive towards self-sufficiency. Actually, what the Indians did not acknowledge, was the fact that there was no emerging supplier state that was in a position to develop an advanced combat aircraft without an adequate civil aeronautical industrial base, thus allowing for the blending of economical requirements for aircraft, alloys, instruments, accessories, as well as hydraulic systems. Without a civil aeronautical industrial base, India was hindered from the substantiation of an adequate base to promote the research and development of various sub-systems and components indigenously, as the exercise would prove to be uneconomical (Gupta, 1990:853–854).

What the Indians had to recognise was the fact that the country's defence industrial base could not go it alone without the inputs or the contribution of other foreign suppliers, particularly with regard to sophisticated weapon sub-systems and platforms. Accordingly, their attention had to be refocused towards adding value to the niches where Indian science and technology had a comparative advantage, such as electronics and software, as well as with other platforms that suited specific environmental conditions similar to those in the South Asian region and the Indian subcontinent (Arnett, 1994:351). Secondly, according to Gupta (1990:854), the quest for self-sufficiency was often affected by delays in encouraging indigenously developed systems and equipment from reaching the production phase, as well as the corollary preference for the licensed-

production of foreign developed items. The main perpetrators in this context were the country's armed forces, which had a tendency of adding requirements to projects that had already reached their developmental stages, thus stretching out and complicating the design and development work of the projects.

Gupta (1990:854–855) argues that these tendencies within the armed forces, on the one hand, were encouraged by the hierarchy of the defence establishment in India, which depreciated the influence and the bargaining power of the defence industrial units *vis-à-vis* the armed Services. Whereas, on the other hand, the armed Services have always had a preference for foreign weapon systems and equipment as opposed to indigenously developed items, which they regarded as inferior and unable to match the weapon systems produced by the leading suppliers. The other culprits in this context were the country's political leaders, who also had a decisive influence on defence production by nullifying the research, development and designing teams' recommendations and projections on the basis of politico-strategic considerations. In certain instances these occurrences were proven to be driven by pure greed and corruption, whereby bribes were reported to have been paid to Indian politicians to select certain contractors and sub-contractors over others, thus negatively impacting on the country's economic and technological substructure.

Finally, it became obvious that the advantages that India had over Pakistan and the PRC were not based on technological superiority but on strategic depth and pure quantity with regard to the former and on advanced Russian technology concerning the latter. Arnett (1994:351–352) maintains that the production of indigenous designs therefore was not geared towards gaining an advantage over the two of India's critical adversaries but towards boosting the country's international prestige, saving on desperately required foreign exchange, as well as on averting the mass departure of expensively trained scientists and engineers from the country. Nonetheless, most of these objectives proved to be unrealisable, as the country failed to preserve or salvage gravely indispensable foreign exchange or to prevent the science and technology graduates from leaving the country. With regard to the latter, the DRDO was unable to introduce programmes that could guarantee them the appropriate application of their talents according to their wishes and orientations.

Gupta (1995:455–456) claims that the increase of the Indian defence budget to approximately US$7.4 billion in 1994–1995 implied a drastic increase during the 1990s that also reflected concerns about the demise of the Soviet Union, as close to 70 percent of India's defence equipment was of

Soviet origin. Therefore, to maintain and replace such equipment insinuated a very costly process that had to reconsider the fact that soft currency procurements were no longer available. The fragmentation of the Soviet Union also implied that spare parts had to be purchased from the other members of the Commonwealth of Independent States (CIS) that used to form part of the Soviet republics as well as the individual defence firms within those states. Indigenous development and production of spare parts was slow and failing to conform to the needs of the armed forces and subsequently they had to rely on imported components, particularly for the aircraft, helicopter and armour projects. Although indigenous production or refurbishment of older systems for the South Asian theatre could be feasible, it would nonetheless greatly proscribe India's efforts to project power beyond the regional context, as the country's armed forces could be faced with technologically advanced adversaries.

7.4 THE INDIAN DEFENCE INDUSTRY'S CAPACITY TO EXPORT ITS WARES

Although most analyses maintained that India's role as an arms supplier was limited by the country's non-aligned posture during the Cold War period, the actual reason however was that the Indian defence industry was not created for the gratification of the export market. The primary motive for the establishment of the defence industry was based on politico-strategic and military-operational, rather than economic or commercial, considerations (Graham, 1984:177). For instance, India refused in 1987 to sell the MiG-21 fighter aircraft to Zimbabwe on the grounds that it did not want to become acutely involved in the problems of the Southern African region. The other reasons for India's failure to penetrate the export market were delays in production and the dearth of an effective marketing mechanism or structure (Gupta, 1990:858). India did not succeed in gaining a foothold in the export market, even within the South Asian region, except for the generous transfer of helicopters and patrol boats to Nepal and Bangladesh, where these states had previously procured such systems from other suppliers (Graham, 1984:177).

The attempts to sell the HT-2 trainer aircraft to Myanmar (Burma), Thailand, Cambodia and Malaysia were not successful, and other ventures were restricted by licensing arrangements, such as the Soviet restriction for the sale of MiG-21 components to Egypt (Graham, 1984:177–178). These licensing arrangements also impacted on India's attempts to export the Vijayanta tank, as Vickers imposed restrictions on the re-transfer of technology to other states without its approval (Gupta, 1990:858). India, therefore, listed amongst its exports the transfer of surplus equipment such as the

Centurion tanks through a middleman to South Africa in the 1960s. Other exports included the sale of non-lethal equipment as well as civilian helicopters to the Soviet Union to be used in Siberia (Gupta, 1990:857–858). In the early 1980s, India exported fifty Vijayanta tanks to Kuwait, but the transaction was not followed by other orders (Graham, 1984:178).

In 1982, the Indian government resolved to increase the country's defence exports as a measure to achieve economies of scale within the defence industry (Graham, 1984:178), and this resulted in the establishment of a new high-level committee in 1983 to promote the country's arms exports. However, in 1985, the export committee handed over its mandate to junior bureaucrats in the Defence Production Ministry, and in 1989 a new agency was set up to improve on the work of the export committee. As a result, India exported equipment worth US$35 million in 1989 to 1990, the bulk of which consisted of civil engineering equipment from BEML, and part of which included electronic aeronautic and nautical systems for approximately US$6 million (Gupta, 1990:858).

Despite the resolve to improve its position within the export market, India still suffers from the reluctance to shift from politico-strategic considerations towards commercial proficiency, as focus is still centred on government-to-government transactions (Gupta, 1990:858). This tendency was also imbued within the country's economic system, as export pessimism appeared to be preponderant in the pattern of independent growth that emphasised a closed economic system (Ward, et al., 1991:43). The defence industry, however, was beginning to earmark those areas in which India had a comparative advantage, such as non-sophisticated items that included patrol boats, military vehicles, weapon-lifting equipment, parachutes, uniforms and leatherwear (Gupta, 1990:858). Indeed, Gupta (1990:860–861) argues that India could also focus its attention on improving low-tech systems such as the piston-engine trainer, the basic jet trainer and the 130-mm field gun, which the country produced indigenously in the 1960s. These low-tech systems could bring stability to the defence production base and lay the basis for the development of more advanced systems.

Moreover, according to Gupta (1990:860–861), the defence industry could integrate itself with those of the leading and other emerging suppliers in order to assimilate their advanced technologies and techniques, as well as focus on the exportation of components and spare parts for the weapon systems that the country was already producing under licence. Furthermore, with the advantage of a large domestic market, India could also focus its attention on reassuring its defence industry that the armed forces would always prefer locally developed systems and equipment rather than those from

abroad. Finally, the defence industry was not supposed to overlook the interests of the export market in its defence research and development and had to be prepared to yield to commercial considerations in order to compete with other enterprising emerging suppliers such as Sweden, Canada, Brazil, South Korea and Israel.

7.5 CONCLUSIONS

Although India's perceptions of the contradictions between itself and the PRC after the mid-1980s were not as pronounced as they were during the period after independence, and most particularly during the early 1960s and the 1970s, it still considered the PRC's support for Pakistan's defence programmes and the stance of being a South Asian major power as potentially destabilising and threatening to its own regional power status. Nevertheless, after 1983, the PRC was not included in the Defence Ministry's Annual Report as a threat to India's sovereignty. Rather the emphasis was on Pakistan's efforts to develop a nuclear capability as well as the delivery systems that were aimed at countering India's ballistic missile programme. The dispute over Jammu and Kashmir still remains as the primary cause of instability within the region of South Asia, which has the potential of developing into a fully-blown conflict from the sporadic acts of fighting between the Indian and Pakistani forces, as well as the Islamic guerrillas that are often harassing the Indian armed forces. The Indian government is absolutely convinced that the Islamic guerrillas are instigated and assisted by Pakistan.

Defence programmes that India is pursuing at present are a response to Pakistan's efforts to obtain more advanced weapon systems, which is a trend that has been followed over the past thirty years. India has continued to primarily rely on the successor to the Soviet Union, Russia, as the main supplier of its major weapon systems, most particularly aircraft, such as the Sukhoi Su-27, the MiG-27 and the MiG-29, as well as the T-80 main battle tanks. The procurement of the MiGs and the T-80 main battle tanks was a response to the traditional concern from the military establishment that the Light Combat Aircraft and the Arjun tank projects were not achieving their desired intentions. Whilst, on the other hand, Pakistan was continuing to obtain more advanced systems, such that the two projects were no longer an appropriate counter-measure to Pakistan's maturing capabilities. India has also continued to emphasise that in obtaining foreign weapon systems, it should be able to license-manufacture them and also to produce some of their components such that it could be

allowed to sell back to the original supplier, thus salvaging part of the foreign exchange that it has to forfeit as a result of the arms purchase.

However, what is still perplexing a number of analysts, is the fact that India is still an acute net recipient within the arms production and transfer system, although it possesses one of the most advanced defence industries in the world, compared to other emerging producers such as Brazil, Israel or South Korea. Yet it was regarded by the Stockholm International Peace Research Institute (SIPRI) in 1999 as the sixth leading arms recipient in the world, and ironically the 53rd arms supplier in the system, with arms sales amounting to around US$3 million in 1995 and 1999 (Hagelin, et al., 2000:368–373). Although India, like all other arms producing states, is compelled to export its weapon systems in order to sustain its defence industrial base, it is, however, not pressured like the other emerging and leading suppliers, as it has a large domestic market that is focussed on 'substantial threats' that are politically justifiable to the taxpayers and the legislature. It will be interesting to observe how the Indian defence industry will cope without such threats, particularly if it aims to become a major player in the international arms market, with its vast defence industrial base and particularly its diversified and comprehensive nature.

India's concerns over the bigger picture beyond the South Asian region has also made it to have one of the largest military machines in the world, characterised by one of the robust navies and air forces globally. In 1977, according to Husain (1986:33), India had the third largest standing army, the fifth largest air force, and the eighth largest navy in the world. The primary focus of these forces include the Middle East, Southeast Asia and the Indian Ocean basin, where it co-operates with other littoral states under the Indian Ocean Rim Association for Regional Co-operation (IOR-ARC) arrangement, mainly driven by South Africa, Australia and India itself (Mills, 1998/9:148). The major vexation in India's foreign relations is global concerns over the nuclear weapons programmes that are incessantly developing between itself and Pakistan, the resistance to sign the Nuclear Non-Proliferation Treaty (NPT) and the Comprehensive Test Ban Treaty (CTBT), and the triangular justifications for pursuing such capabilities. India justifies its pursuit of a nuclear weapons programme on the untouched capabilities of the recognised nuclear powers, most particularly the PRC, whereas Pakistan claims that it is prepared to forego its own programme if India does the same.

However, the process is a vicious circle that seems to be intensifying with India's development of the Privthi and the Agni intermediate range nuclear-capable ballistic missiles under the Integrated Guided Missile Development Programme (IGMP), and the reports that Pakistan has also developed its own versions of the PRC's inter-mediate range ballistic missiles capability. Despite the fact that the international community is showing concern over the unstable South Asian quagmire, efforts have not been addressed from the perspectives of the concerned parties in the region. This is apparent from the continuing efforts to develop and procure advanced weapon systems and defence-related equipment as part of an abnormal arms dynamic. The primary focus should be on obtaining a political solution to the problem, rather than addressing the concerns from an anti-proliferation perspective. This political impasse might perhaps be resolved by efforts of other Third World states in the Non-Aligned Movement or another regional arrangement, such as the IOR-ARC, that is not perceived to have vested interest or biased towards any one party in the conflict.

India therefore can be regarded as a tertiary emerging arms supplier within the hierarchy of the arms production and transfer system. It shares this status with other emerging arms producing states, such as South Africa, Malaysia, Australia and Singapore, amongst others, which have not yet established themselves as prominent and formidable suppliers within the international arms market. However, India has all the attributes of a secondary emerging supplier, and could even become a primary emerging supplier, if the economic and commercial considerations could outperform the politico-strategic concerns as the rationale for developing, producing and transferring armaments.

PART THREE

ANALYSIS, FINDINGS AND CONCLUSIONS

CHAPTER 8 – ANALYSIS AND FINDINGS

8.1 INTRODUCTION

Following the specific focuses on the various case studies in the previous chapters, this chapter is an effort towards consolidating the universal challenges faced by emerging suppliers within the international arms production and transfer system as well as the international hierarchy of states characterised by anarchic relations. These challenges are addressed under the following themes: emerging suppliers and dependent production and exports; political versus economic motives for indigenous defence production; the evolution of emerging suppliers; the transfer of technology and perpetual dependence; the stratification of emerging suppliers; emerging suppliers as recipients; and emerging suppliers and the current arms production and transfer system. These findings, therefore, lay the basis for the inferences that have been spawned at the end of the study.

8.2 EMERGING SUPPLIERS AND DEPENDENT PRODUCTION AND EXPORTS

8.2.1 Dependent Production

The fundamental motivation for emerging arms suppliers to produce arms was the desire to overcome their position of dependence in the system of arms production and transfers. However, their predicament as late entrants into the system, besides the primary emerging suppliers, such as Sweden, castigated them to fail in this endeavour. This failure, according to Krause (1992:153–154), is based on three criteria, which also assist in the identification of emerging suppliers. Firstly, the weaponry they produce is far below the sophistication characterised by higher levels of technological advancement. Secondly, they can only produce one or two advanced weapon systems. Finally, they rely on the leading suppliers for certain sophisticated components of weapon systems which they cannot produce themselves and as a result, become dependent to such an extent that they, with an exception of a few, are unable to go beyond the simple reproduction or retrofitting of existing weapon systems. Indeed, the capability to produce arms was restrictedly extended to certain states in the post-war era, and even those states that did obtain such a capability were confined to producing small arms and platforms for major weapon systems.

Those states that went beyond these capabilities did so with the assistance of other states or specialists, the initial intention being to meet domestic requirements, and ultimately to dispose of surplus Second World War equipment into the re-transfer market. Therefore, the efforts to develop an arms production capability were mainly focused on reproducing or retrofitting Second World War vintage systems, and only a few emerging supplier states progressed beyond that level. The intention to develop indigenous arms industries was driven by the political urge to reduce their reliance on the leading suppliers and to nationalise the arms production process for import substitution in order to meet domestic security needs. Amongst the studied cases, India was motivated by the politico-strategic objectives as it was confronted by incessant conflict and correspondingly precarious suppliers; Sweden by its non-aligned and neutral posture; whilst Brazil (as well as India) was driven by the goals of global status, regional hegemony and geo-political preponderance. For virtually all these emerging producers the intention was to gratify essential domestic demands, with the initial effort being centred on producing simple systems such as ammunition, small arms, artillery systems, armoured vehicles, naval vessels and elementary aircraft.

Emerging producers and suppliers have resisted the leading suppliers' pressure not to develop their own arms production capabilities and at the same time managed to cope with the restrictions imposed by the latter to prohibit them from developing their own indigenous defence capabilities, even though the level of self-sufficiency has not been extensively advanced. The rise and the sustenance of emerging producers and suppliers of weapon systems led to acute contradictions between the controls imposed by the leading suppliers and the autonomy that was coveted by the recipients. Since the emerging suppliers began the process of defence industrialisation from the importation of complete weapon systems to import substitution, and ultimately to the promotion of exports, they mainly relied on technology imported from the leading suppliers. The leading suppliers, on the one hand, attempted to hinder the efforts of emerging suppliers to promote arms exports so as to protect their oligopolistic share of the arms market through tightening the controls and regulations on technological supplies. On the other hand, the emerging suppliers were impelled to promote their arms exports in order to overcome the saturation of their domestic markets, to utilise effectively their arms production capacities and to positively affect their balance of payments through the procreation of foreign exchange returns.

8.2.2 The Pressure to Export Armaments

The trends in exports were almost similar to the trends in production for emerging suppliers, with increases being experienced in the early 1970s and in the mid-1980s. The oil increases of the 1970s and the Middle East conflict, particularly the Iran-Iraq War of the 1980s, augmented the export potential of most of these states, although it was only an ephemeral accomplishment. In fact, the problems encountered with maintaining the production base had to be compensated with arms exports in order to maintain production lines economically viable. Domestic requirements could not absorb all production and thus economies of scale in production were reduced. Therefore, the general trend in the augmentation of exports also resulted in increases in the total transfers of emerging suppliers, and this trend was likely to remain permanent within the system. According to this general trend, the bulk of the exports were accounted for by few of the emerging suppliers: mainly the primary and secondary emerging suppliers, with the tertiary emerging suppliers having little or no exports at all. Nevertheless, there were serious attempts at enhancing their exports, some being pipe dreams and others encountering stiff competition in the market. The successful emerging suppliers usually claimed a niche in certain advanced weapon systems categories and the rest within the simple and elementary sectors of the market, wherein the leading suppliers no longer had a role to play.

This export-oriented approach became apparent in the nature of production that is currently prevalent amongst virtually all the emerging suppliers, with the exception of India, whereby new weapon systems are not necessarily developed for the domestic market, but often prioritise the needs of the export market. Indeed, before an approval is obtained for the development of a particular new weapon system, the desires of the export market are initially contemplated. Consequently, weapon systems that are developed by the emerging suppliers based on licensing or co-production arrangements with the leading suppliers often lead to controversies between the two, primarily because of the re-transfer or end-use attachments to the licensing or co-production contract. Hence, the emerging suppliers are invariably driven towards concentrating even more resources and technology towards generating a palpably independent research and development capability. Some of the emerging suppliers exported arms as politico-strategic tools in order to augment their regional and global status and prestige, by promoting the notion that through the production and exportation of armaments they are advancing upward the ladder of the hierarchical international state system. In

addition, arms are exported as a politico-diplomatic instrument aimed at strengthening relations with other states.

8.3 POLITICAL VERSUS ECONOMIC MOTIVES FOR INDIGENOUS DEFENCE PRODUCTION

All of the emerging arms suppliers are mainly motivated by politico-strategic considerations rather than economic or commercial impetuses in producing and transferring armaments. The objective is usually to reduce the state's dependence on other suppliers in order to uphold national security, as most states are prone to perceiving threats to their interests, particularly their survival, which cannot be surrendered to other precarious supplier states. Thus, most states that have such perceptions believe in augmenting their self-sufficiency through establishing solid defence industries. Other states, such as Brazil and India, are often compelled by perceptions of the status they hold in their respective regions in addition to, or instead of, security considerations. From another angle, pariah states, like the erstwhile racist South Africa and Israel, became the most vulnerable to security-threat perceptions since they were engulfed within an abominable international environment because of their domestic or foreign policies, and were thus compelled to develop a continuous source of supply for their military requirements.

The most general motive for producing arms is the eagerness to avert threats to the security of the state, followed by the intention to maintain or attain regional preponderance and global power as a hegemon or to sustain a posture of non-alignment and neutrality in international relations. These politico-strategic objectives are often discouraged by the leading suppliers, and hence the emerging suppliers are pressured to develop an indigenous production capability in order to avoid dependency on capricious suppliers. Other emerging suppliers view arms production as an expeditious route to economic modernisation, which could ultimately result in the development of domestic technologies and skills. Therefore, the primacy of the politico-strategic motives can be discerned in the evolution of most of the emerging suppliers, especially those states that were subjected to embargoes as a result of being involved in conflict or because of internationally intolerable policies, thus being compelled to initiate indigenous production. Most of these states had restrictions imposed on them to receive sophisticated systems from the leading suppliers, and their endeavours to establish indigenous capabilities can be regarded as natural responses of states confronted by threats to their

security. Without such restrictions, it can be assumed that these states would not have been driven to develop an arms production capability.

For these states, the economic or commercial motives became a by-product of the politico-strategic imperatives, as the intention to produce arms became entrenched within their national security policies. This could be discerned in terms of how the arms industry contributed to general economic growth and development. Although it is apparent that the politico-strategic imperatives were paramount for such states to consider developing an indigenous arms industry, it is, however, not always the case that these are the principal reasons. Military technological spin-offs, such as the technical and managerial skills acquired as well as the general industrial development programmes are also considered to play an important role in the general development of the country. Hence, for instance, Brazil considered an arms industry as an essential element of the country's national development project. States such as Brazil preferred to develop their weapons technology indigenously instead of purchasing first-line equipment off-the-shelf from other suppliers.

If the motive for an indigenous arms production capability was solely the pursuit of economic or commercial advantages, then practically this could not be the case for emerging suppliers, since complete systems purchased in an open market would be much cheaper than purchasing components and blue prints for local production. Moreover, if these states were to engage in independent research and development for their weapon system requirements, the costs would be even higher than to procure equivalent or even more sophisticated systems within an open market. These processes would require stupendous amounts in government subsidies, and in addition, it would have been economically inefficient to introduce capital-intensive processes of arms production within mostly labour-intensive economies. Furthermore, capital investment and formation would be hindered by a defence sector that drains a larger portion of investment capital and technical skills that are scarce within largely developing economies.

Nevertheless, the defence industry is not entirely an economic burden, as certain spin-offs and multiplier effects for the civil industry are also possible and tangible. The development of a defence industry usually leads to an export-oriented industrialisation process that becomes a negation of the process of import substitution, which further accelerates economic modernisation, the growth of infrastructure, skills development and technological finesse. However, such spin-offs and benefits are difficult to obtain and might take time to develop, albeit that they might ultimately reduce the

burden of military outlays. Those states with a larger domestic market, with defence industries that are supported by state subsidies and the local industrial infrastructure, are enabled to sustain the faculty to produce arms. Perhaps, the role played by national perceptions and cohesion regarding threats to the security of the state are also essential in determining the sustainability of an arms production capability. Hence, government involvement or intervention is critical in ensuring domestic industries a niche in the arms market if the emerging supplier states are compelled by economic considerations to export their products.

As late entrants in the arms market, their success is already encumbered by other producers and suppliers who also face stiff competition to maintain their industries operational. The symbolism, prestige and independence provided by the possession of a defence industry makes it difficult for most arms producing states to relinquish it. Although politico-strategic objectives are the architects of an arms production capability for virtually all arms producers and suppliers, most analysts believe that a certain level of economic development is a necessary condition for its successful pursuit. Therefore, those states that have such a faculty might eventually loose it if they do not possess or strive to obtain the necessary economic endowments. States having a low level of demand for arms due to a constricted military force, and accordingly, a restricted domestic market, are thus compelled to increase their exports, but due to other factors, exports from these states are limited.

In order to achieve economies of scale that are intended to overcome the problems related to restricted domestic demand for armaments, most emerging suppliers adopt an approach to develop weapon systems that will from the onset satisfy the export market as well. This approach also ensures that they are able to recoup the start-up costs through foreign exchange attained from export orders, thus also guaranteeing lengthened production runs. A major weapon system project that has a guaranteed export market is also in a better position to receive support from the leading suppliers through the supply of technical data packages, components, sub-systems and even technical expertise. Leading suppliers are also aware of the fact that recipients demand weapon systems that will meet their specific conditional requirements, and these can be best met by systems developed for their similar conditions, of which the emerging suppliers are better placed to provide. Recipients are therefore anticipated to demand such systems from the emerging suppliers regardless of the sophistication that is attributed to the weapon systems developed by the leading suppliers.

Although virtually all arms producing states are compelled by economic constraints to export their defence products, most of the emerging suppliers previously had no bureaucratic establishments to handle arms transfers decisions. Where they existed, they were either primitive or lacked the challenge of public opinion, as was the case with the leading supplier states, except for those states that had always maintained a strict policy on arms transfers, such as Sweden. This was due to the prestige that was bestowed an arms production faculty, which was reflective of the national pride that corresponded to the political independence of that particular state within the international system. Within those states where arms production had a strong export-orientation, decisions appeared to be apathetic to the state's security requirements, which was reiterated by the significance accorded arms exports as a proportion of overall international trade *vis-à-vis* the leading suppliers.

In these circumstances, there was a great propensity for susceptibility to market fluctuations, particularly with the uneven nature of international trade, as export opportunities became god-sent. Competition was also vicious among the export-oriented states, particularly amongst the secondary emerging arms producers and suppliers in the Third World, South Korea, Israel and Brazil, which are considered to be the most frequent and the most active. These arms producing states are highly ranked as arms exporters, albeit below the rank of primary emerging suppliers, and are also considered to have defence industries that are reputedly highly developed within the Third World, thus implying that the successful exporters are therefore also the successful producers.

8.4 THE EVOLUTION OF EMERGING SUPPLIERS

Most of the analyses of emerging suppliers' evolution as arms producers reflect a ladder-like pattern, which is reputedly inner-motivated towards self-sufficiency, conforming to the political leadership's craving for independent indigenous production. The step-like ladder pattern (see Figure 8.1 below) begins with the faculty to conduct uncomplicated maintenance tasks towards entirely autonomous indigenous research, development and production. According to Krause (1992:171), this pattern is for analysis and description of the levels of the evolution of the emerging suppliers' production capability rather than being the reality of the evolution of defence industrialisation as other analysts would assume. For example, Pierre (1982:124) insists that to create an indigenous arms industry is an incremental process, requiring the transfer of technology and knowledge from the leading suppliers. Pierre (1982:124–125) argues that usually the process

begins with the ability to maintain imported equipment, followed by the ability to assemble imported components, then followed by the competence to produce the weapon system itself or parts thereof through a licensing arrangement, and finally the faculty to research and develop an indigenous weapon system itself.

Figure 8.1: The Ladder-like Pattern of the Evolution of Emerging Suppliers

PHASES	CAPABILITY
Fourth Phase	Research and development of indigenous systems and equipment
Third Phase	Licensing, co-production, copying, and modifying foreign equipment and systems
Second Phase	Assemble imported components and parts
First Phase	Repair and maintain imported systems and equipment

Louscher and Schwarz (1989:51) also acquiesce that the process of acquiring the capability to indigenously manufacture armaments follows similar stages, with the final stage being the ability to independently research, develop and manufacture advanced systems with little or no foreign assistance. Most of the states that are inclined towards indigenous arms production follow this process as a means of ensuring that the major part of their wherewithal is consumed domestically, thus securing local employment. Moreover, this process is often augmented by the conditions of the buyers' market, whereby suppliers in competition with each other often make their bids attractive by offering to have production done in the recipients' territory, as direct offset or counter-trade arrangement. These arrangements do contain inevitable fatalistic effects for the leading suppliers, as they could constrict prospective market opportunities and/or provide recipients with technological capabilities that might be used against them in future. Nevertheless, in most cases, licensing and co-production arrangements become the stepping stones towards indigenous research, development and production.

In reality, however, the process is not as sequential as it is portrayed in Figure 8.1, but is rather erratic, leading to the concurrence that some of the emerging suppliers are competent to reach the stage of autonomous indigenous research, development and production, particularly within those states wherein industrial development has reached an appropriate level. This, nonetheless, is not often the case, since even the primary emerging suppliers in the developed world, such as Sweden, still have a limited independent research, development and production capability for sophisticated weapon systems, and also require foreign components for some of their advanced systems. Nevertheless, the tremendous successes of secondary emerging suppliers, such as Brazil, in the

international arms market are based on certain political and economic factors. Essentially, it is the ability to offer relatively reliable products at low cost due to the abundant supply of labour, when compared to capital-intensive industries within the developed world.

Subsequently, the weapon systems produced by emerging suppliers are relatively simple to operate, repair and maintain compared to systems developed by the leading suppliers. Such weapon systems are often transferred without restrictions on end-use and re-transfers, which makes transactions more commercially oriented than otherwise. Moreover, the arms production technology that the emerging suppliers obtain from the leading suppliers is guaranteed and standardised, and therefore acceptable to the recipients. However, for the tertiary emerging suppliers, such as India, the situation is more challenging, even for those states that have the capability to produce weapon systems across-the-board. Therefore, there is neither uniformity in the manner in which the emerging suppliers have evolved, nor can they all claim to be autonomous producers, as they have not mastered the process of technological innovation except for a few weapon systems and equipment.

As part of their evolution, emerging arms producers pursue exports as a way of reducing the unit costs of the weapon systems so as to earn foreign exchange and to obtain certain economic and political advantages. However, the possibilities for these states to become large-scale exporters are minimal, as they lack the quality and quantity of skilled labour that has the potential to produce advanced systems. Advanced weapon systems are dependent on engineering and technical skills that are not painlessly obtained, and those states that have managed to develop an indigenous manufacturing capability are unable to manufacture advanced systems independently, except for the primary emerging suppliers, such as Sweden, to a limited extent. Only a few secondary as well as tertiary emerging supplier states, such as Brazil, Israel and South Korea as well as India and South Africa respectively, have the potential to produce medium-level technology systems independently. Nevertheless, all the emerging supplier states still rely on other leading suppliers for research and development, which is subsequently transferred through licensing or co-production arrangements.

Although emerging producers may be constrained to secure an export contract before they can pursue the production of a weapon system, they manage to integrate sub-systems developed by leading suppliers into their own indigenous systems, thus reducing research, development and other start-up costs. This enables their systems to be more reliable, acceptable, simple and cheap to compete with other advanced systems that are marketed by the leading suppliers. Therefore, most

of the emerging suppliers' indigenous projects have to rely on foreign components and technological assistance for their success. The reason is that it is not a simple process to initiate a design and to actually develop it to substantive production.

Through licensed-production, these states are enabled to develop indigenous defence industries, however, the exorbitant costs associated with defence production and its demand for economies of scale, compels these arms producers to covet markets for exporting their weapon systems. However, the painful truth is that such weapon systems can become obsolete even before they become effectively employed when compared to other systems already available in the market. The international arms market is, nevertheless, a highly and fiercely competitive market, even amongst firms within the domestic market. The need to enter the export market is strongly compelled by economic imperatives, which are primarily driven by politico-strategic necessities. What should be noted, nonetheless, is that emerging suppliers have the capability to export indigenously developed weapons systems that contain foreign components, unless re-transfer or end-use restrictions have been unequivocally imposed on those components.

Those states that have developed a large defence industry, with India being the exception, are forced to assertively promote their exports so as to be able to finance their industries, to reduce the unit costs of production and to alleviate the costs of research and development. Alternatively, states could collectively or co-operatively produce arms in order to share the costs of production and marketing as other leading suppliers do, particularly in Western Europe. The main problem is that although emerging supplier states enterprisingly pursue indigenous arms production and exports, they do not yet have the capability to challenge the primary or secondary leading suppliers and accordingly access the higher tiers. Therefore, they are incapable of achieving their desired objective of self-sufficiency or self-reliance in arms procurement. The reason is that the same motive that compelled them to covet an arms production capability, that of guaranteed security, impels them to seek even more advanced weapon systems as they ascend the ladder of technological sophistication. These systems, deplorably, are only concentrated amongst a few suppliers at the leading edge of technological advancement, and accordingly self-sufficiency or self-reliance becomes an illusionary exercise for the emerging suppliers as the military technological goal posts are shifted even further.

Emerging suppliers tend to have a problem with advancing further than the phase of limited independent production of less-advanced systems, or even limited production of sophisticated systems, due to several reasons. One of these reasons is that the capacity to spend on research and development, and the capability for technological innovation is still the province of the leading suppliers. The probability for emerging suppliers to move towards developing the capability to manufacture essential components such as engines, propulsion systems, avionics, fire control systems and advanced armour, is still far-fetched. There are a few who have the capability to develop one or two of the components for certain major weapon systems, but not across-the-board. The second reason is the fact that with the edge of technological advancement constantly shifting further, the implication is that the emerging suppliers' relative progress is stalled by the introduction of new sophisticated systems. Unless the vivacity of technological innovation is slowed down, these states will face a difficult challenge to move towards the technological frontier..

The third reason is that for the emerging suppliers to reach higher levels of the ladder of arms production, they will be compelled to assume a greater (and increasing) share of the international arms market. If they fail to do so, they will be relegated towards occupying narrow product niches with the increased constriction and saturation of the market. As most of these states' industries rely on these product niches, the possibility for them to perish is greater, as they have a lower level of domestic demand and are thus compelled to depend on the export market. The final reason is that the process of the diffusion of military technology is obviously rough, capricious and precarious, thus these emerging supplier states cannot expect the route to technological progress to be smooth. Nonetheless, there are qualitative technological breakthroughs for some and relapses for others, depending on the manner in which certain factors are endowed, and the hierarchical structure of the arms production and transfer system usually remains undisturbed.

Weapons of a lower or middle range of sophistication are easily available amongst the emerging suppliers, as they have started to create a class or tier of their own that however is still dependent upon the leading suppliers for particular sub-systems, components and parts at the technological edge of advancement. The production of advanced weapon systems requires sophisticated components and sub-systems as well as unique technological infrastructure and resources, particularly capital for enormous investments, which are often deficient in a number of developing states. Therefore, emerging suppliers can only affect the arms production and transfer picture minimally, as the major sophisticated systems, which may drastically tilt the balance of forces in a

region, will remain solely a domain of a few leading suppliers. Accordingly, the global arms production and transfer system will remain a hierarchical framework, based on the various tiers, depending on the level of technological sophistication that a supplier is endowed and capable to accomplish. Only the primary emerging suppliers, such as Sweden, can effectively transform the structure of the system because of their technological capabilities that have been proven in the past, in addition to their proximity to other leading suppliers. For these states, only political will is required for them to ascend the hierarchy of the system, although they will be constrained by other factors to do so: financial and other resource endowments; arms control imperatives; the decline of the need for military coercion; and deliberate efforts by other actors in the system.

8.5 THE TRANSFER OF TECHNOLOGY AND PERPETUAL DEPENDENCE

Indeed, there are very few projects in which independent and indigenous production can be identified amongst the emerging suppliers. Most of these are simple weapon systems projects such as weapon platforms, multiple rocket launchers, artillery systems and armoured vehicles that do not necessary require sophisticated components. With sophisticated weapon systems such as aircraft, naval vessels and missile systems, emerging suppliers are heavily reliant on the leading suppliers for specific components and sub-systems such as engines, power plants and electronic packages. Moreover, it is mainly the political will of these states' leadership that will make them to achieve greater strides as arms producers and suppliers. In most instances, there are three basic groups of factors that promote or restrict the state's decision-makers' efforts towards augmenting defence programmes in pursuit of national interests. First amongst these factors is the nature and character of prevailing forces, along with the existing infrastructure to support them. In the second place is the capacity of the national economy and the state budget to sustain and promote defence capabilities. Finally, is the politico-strategic posture of the state, its involvement in existing alliances, as well as the size and scope of the threat to its national interests (Anthony, 1990:159–160).

There is always a need for states to upgrade their forces without disrupting the existing supporting infrastructure, as an enormous amount of capital and personnel are committed in sustaining such an infrastructure. This implies, therefore, that long-term planning is required for the sustenance of such an infrastructure, and the infusion of new foreign equipment creates problems of compatibility in maintenance and operation. As a result, states become reluctant to change the sources of their

supplies. This tendency of sticking to single or similar suppliers creates long-lasting supplier-recipient relationships, whereby a recipient's discretion to diversify the sources of supply is restricted by either economic, politico-strategic or diplomatic imperatives. Those states, in particular, that do not possess an adequate defence industrial base to sustain their long-term force planning are compelled to import all of their requirements on the basis of availability, which is often satisfied through the procurement of equipment from single principal sources. In most instances, such arms transfer relationships are a reflection of politico-strategic or diplomatic patron-client relationships.

Figure 8.2: The Efficacy of the Transfer of Technology

SUPPLIER		
LOW EFFICACY		
Complete products without maintenance and operational data	Commercial literature	Trade exhibits
AVERAGE EFFICACY		
Processing equipment without know-how	Commercial visits	Licences with less/without know-how
EFFECTIVE		
Consulting	Licences with know-how	Documented Proposals
HIGHER EFFICACY		
Incessant technical exchange and high technology training	Processing and capital equipment with know-how	Engineering documents and technical data
HIGHEST EFFICACY		
Turnkey factory	Licences with extensive training	Co-production arrangements
RECIPIENT		

Source: McLaurin, R. D. (1989). "Technology Acquisition: A Case Study of the Supply Side." In Baek, K., McLaurin, R. D. and Moon, C. (Eds.). **The Dilemma of Third World Defense Industries: Supplier Control or Recipient Autonomy?** Nam-Ku, Inchon: Center for International Studies, Inha University.

Moreover, there are variations in the manner in which technology is transferred from the leading suppliers to the unfolding producers and suppliers. According to McLaurin (1989:61–63), it varies from the transfer of commercial literature, co-production arrangements, to the creation of turnkey factories (see Figure 8.2 above). The essence of technology transfer is the provision of advanced training or education in sophisticated technology or through technical exchanges that result in incessant contact through various contexts, such as government-to-government, government-to-

industry, and industry-to-industry with government sponsorship, or being an entirely private affair. The exchange of technical know-how can be concluded through co-operative or collaborative research and development, which becomes a very effective method of transferring technology. Another method is the co-production arrangement between two or more states or their industries, and also its variation, foreign affiliation, which is the extension of ownership to other states or a merger amongst various industries in different states.

McLaurin (1989:63–64) believes that a very active and potent force for development, on the one hand, is the establishment of turnkey operations, which is usually followed by a training arrangement and the transfer of management services. On the other hand, the licensing arrangement, which is not in itself an effective channel for transferring technology, is a *prima facie* acknowledgement of the licensee's possession of the technology, unless it is viewed as an institutional framework within which a training arrangement is incorporated. Other channels include the transfer of engineering and technical data documents, capital and processing equipment, commercial visits, international conferences and trade exhibits, professional and commercial literature, final products, and undocumented proposals. Nevertheless, there are always problems encountered in trying to demarcate between military and non-military technology, as there is no clear dividing line between the two. Moreover, data on military transfers is usually concealed through government classification and through proprietary restrictions.

What is often documented is the transfer of complete weapon systems, which is not the transfer of technology, unless know-how is absorbed by the recipient as a result of specific maintenance and support training and not on the operation of the weapon system in and of itself. However, reverse engineering is a form of technology transfer, which is the ability to learn about the changes in a final product over a certain period of time. Emerging suppliers usually develop platforms on which foreign-developed sub-systems are integrated, thus insinuating a mere licensed or co-production arrangement that cannot be regarded as an independent production faculty. It is only those few major weapon systems such as the Brazilian turboprop aircraft projects, the Swedish Kockums submarines and India's ballistic missile systems that can be considered to be independently developed systems, although they also contain foreign-developed components and technology. Secondly, only these three states, Sweden, Brazil and India, can be considered to have a faculty to produce weapons across-the-board, which is nonetheless dependent on foreign technology transfers and not at a very high level of sophistication, except for one or two systems.

With the increasing technological capabilities of the emerging suppliers, they also develop the faculty to adapt existing sub-systems for other purposes. For instance, they are able to purchase various sub-systems and components from the leading suppliers in order to develop re-engineered hybrid systems for the export market, particularly to Third World arms recipients. Long-acquired weapon systems are retrofitted with newly acquired sub-systems and components that result in new versions of the armaments that are guaranteed to meet the needs of the recipients without increasing the costs of research and development. In most instances, such hybrid systems are developed with the co-operation of the leading suppliers with sub-systems that are already available in the market. The process requires their eclectic combination and integration, resulting in a new low-cost product with proven reliability and the availability of spare parts in the open market. Therefore, a large portion of the current arms trade is dominated by the re-exportation of re-engineered hybrid systems within which emerging supplier states, in collaboration with advanced firms in the leading supplier states, are involved. It is a crucial sector in the arms market within which the emerging suppliers have a guaranteed niche that might be extensively augmented in future.

As a consequence of a buyers' market, most leading suppliers are keen to provide the emerging suppliers with technological know-how to promote their indigenous defence production despite the fact that they are actually facilitating the evolution of future competitors in the arms market. These competitors are not only facilitated for the development of finished weapon systems, but also include the development of offshore sub-contractors that could have been availed in the leading supplier's own defence or civilian industrial base, thus leading to a loss of contracts and the subsequent loss of employment. These offshore sub-contractors obtain the technological know-how through licensed or co-production arrangements or through the re-engineering or the rebuilding of imported sub-systems and equipment. Nevertheless, policy-makers of the leading supplier states are constrained by the ever-increasing defence costs to obtain quick-fix solutions rather than to consider the long-term consequences of technology transfers. The reasons for opting for short-term solutions are firstly that only a few states have the potential to be qualified as emerging producers and suppliers. Secondly, these emerging suppliers are still heavily dependent on the leading suppliers for most of their specialised technological and component requirements for their overall weapons production. So, all in all, the leading suppliers are unequivocally decisive in terms of deciding the quality and quantity of technology transferred, and hence the possibilities of emerging suppliers becoming potent competitors in the arms market are still a remote possibility.

There are important factors that need to be considered with regard to this pattern of dependence. The first factor is that the development of an indigenous arms production capability, regardless of the level, accords a state a certain level of independence from the leading suppliers, as it can assert itself in international relations with a larger space for freedom of action. Albeit such a state is still technologically dependent on the leading suppliers, it has the advantage that in the longer-term it could overcome its dependence and become a substantial competitor in the arms market. The second factor is that the leading suppliers do not foresee the emerging suppliers becoming serious future competitors in the arms market, rather they are viewed as future collaborators in the alleviation of defence costs. For the leading suppliers, co-development and co-production arrangements are rather a necessary evil for the expansion of the market, particularly for specialised technological and component requirements that can be gratified on a collaborative basis. The project costs of developing new weapon systems are therefore spread amongst a substantial number of states and firms, thus resulting in more efficient economies of scale that would not have been achieved through individual state production.

However, with the shifting technological frontier, as weapon systems become more and more sophisticated, the technological dependence of emerging suppliers becomes more pronounced. Nevertheless, the level of dependence cannot be measured as the examination of the supply of technological components is also linked to the availability of alternatives, particularly within a buyers' market. Moreover, most of the licensed and co-production arrangements are conducted with the secondary leading suppliers, which are predisposed to be export-oriented, and as a result are vulnerable to impart some of their technological competence in order to keep their industries warm and operational. Furthermore, as a corollary, the secondary leading suppliers might be less bent towards imposing end-use or re-transfer restrictions on their products, which reduces even further the intensity of the dependency relationship.

The third factor in the pattern of dependence is that several indicators such as population size and composition, the domestic market, gross-national product and access to foreign exchange on a long-term basis, suggest that only a few states have the potential to uphold the flag of being parvenu arms suppliers. Hence, those below that level are far more limited than their counterparts to develop an arms production capability that might prove to be a prospective contributor and competitor in the future arms market. However, these objective indicators can not be considered in isolation from the

subjective factors such as the proclivity of the political leadership towards the defence establishment and the possibilities of technological transfers that could overcome the constraints imposed by political or economic conditions. The transfer of technology is an essential requirement for a state to develop an indigenous arms production capability, particularly in the realm of sophisticated systems. Moreover, it is an arena within which the leading suppliers wield more power and discretion in terms of determining as to who gets what technology, when and how. Thus reinforcing the assertion that the (secondary) leading suppliers view the emerging suppliers as prospective collaborators rather than competitors in the future arms market.

What is significant with regard to measures aimed at restricting the transfer of technology, is that the transfer of components or sub-systems is not politically salient as the transfer of complete weapon systems and usually does not attract the sensitivity or opprobrium that is often associated with the latter. Moreover, controls over components or sub-systems are normally difficult to execute, as some of these are dual-use items and therefore not covered by the arms transfers, re-transfers and end-use restrictions. Another significant aspect with regard to arms control measures, is the adoption of global, rather than regional, approaches towards handling the transfer of technology to emerging suppliers. The problem with a global approach, as opposed to regional approaches, irrespective of its conceptual elegance, is more convoluted if it is to be ubiquitously applied, since the respective requirements for arms, for stability and for sophistication, are regionally contextual. The peculiarity of every region offers a varying mixture of dilemmas and probabilities, and hence the diffusion of power, one principal dimension of which is the transfer of military technology, generates a novel focus towards pluralism and regionalism.

Primarily, it is the regional politico-strategic tensions, based on real or perceived threats, which lead to competitive arms dynamics that are sometimes extended to become regional arms races. Subsequently, regional approaches become the most effective devices for analysis and therefore for the development of opportunities for co-operation in the arms production and transfer system, specifically in the area of restraining further transfers into or out of a region. The diffusion of power is a consequence of essentially systemic causes, particularly the anarchic conditions that increase the requirements for armaments and therefore elevate the significance of regional military balances. Therefore, arms transfers (and the transfer of military technology) are neither an equivocal nor a petty affair, but a pivotal foreign policy imperative whose salience can never be overlooked within contemporary international relations.

8.6 THE STRATIFICATION OF EMERGING ARMS SUPPLIERS

Although political and security reasons are preponderant for virtually every state's decision to embark on an arms production endeavour, the driving force is usually the desire to be self-sufficient and independent in international relations. However, during the process of equipping and developing the armed forces of an arms producing state, the need for more advanced equipment is always recognised, as the rival state(s) try to do the same, usually through straight (off-the-shelf) transfers from abroad. The producing state is therefore compelled to obtain more sophisticated systems that can not be usually produced indigenously, regardless of its relatively advanced industry in order to counter the efforts of its rival(s). Therefore, the competition it encounters from its rival(s) coerces that particular state to import foreign systems or to co-produce or produce them under license, which leads to one of the reasons for most emerging supplier states to fail to become leading suppliers. From another dimension, the leading suppliers are sceptical and therefore reluctant to offer the technological know-how to manufacture weapon systems, as these systems can be used against them in future because of the vicissitudes of international relations and the probabilities of re-transfers. Moreover, there is the likelihood that these states might in future reduce their dependence on the leading suppliers and even constrict the size of the market as competitors. This therefore maintains the market as a hierarchical oligopoly that can only be marginally altered by the emerging suppliers.

Figure 8.3: The Stratification of Emerging Suppliers

RANK	STATES	CAPABILITIES
Primary Emerging Suppliers	Sweden Czech Rep Canada	Have slightly captured the process of technological innovation and a limited independent R and D and production capability for highly advanced weapon systems. But require foreign components for some of their advanced systems.
Secondary Emerging Suppliers	Brazil Israel South Korea	Have managed to capture the technical propensity to adapt existing systems and to develop fairly sophisticated systems for their armed forces and even to satisfy the export market.
Tertiary Emerging Suppliers	India Singapore South Africa	Are confined within the ambit of reproducing existing systems, and they have managed to develop several sophisticated systems, but are still heavily reliant on the inputs of the leading suppliers to move up the ladder of production.

Within the emerging suppliers themselves there also exists three tiers, the first being the primary emerging suppliers, followed by the secondary emerging suppliers, Brazil, Israel and South Korea, which have managed to capture the technical propensity to adapt existing systems for their armed forces and even to satisfy the export market. This is a required quality to advance to the threshold of a primary emerging supplier, like Sweden, Canada and the Czech Republic (see Figure 8.3 above). The other tertiary emerging suppliers, such as India, Singapore and South Africa are still confined within the ambit of reproducing existing systems, although they have managed to develop several sophisticated systems, they are still heavily reliant on the inputs of the leading suppliers to move up the ladder of production. It is therefore important, according to Krause (1992:180), to note the extent of technological innovation, as it is the determining factor moulding the patterns and the hierarchy of the arms production and transfer system, particularly the ranking of the actors.

Although some emerging suppliers have attained a certain level of technological sophistication, they are relegated by the pace of technological innovation, as the weapon systems become more advanced and thus the costs for research and development become more pronounced. As an enclave of the overall industrial sector, the defence industry has the capacity to transcend beyond the general economical and technological growth rate within the state, albeit with the risk of being constrained by the fluctuations of the global market. Moreover, the defence industrial technological exposures acquired can be supplanted to the civilian sectors and even provide the impetus for economic growth and development. Generally, arms producing states are pressured by the heavy demands of the production process to pursue exports, which, if a place in the export market is secured, compels the shelving of other considerations of arms transfers. These include the politico-strategic and diplomatic imperatives as well as their subordination to the imperatives of maintaining the defence industry operational and being part of the military technological dynamic.

Nevertheless, the quantity of emerging suppliers will in future be marginally increased or even reduced by the increasing contributions made by the prevailing suppliers as a consequence of a greater endeavour by certain states such as Brazil, South Korea and Israel to augment their exports. Most significantly, with the transformation from a sellers' market to a buyers' market, recipients are contemporarily enabled to determine the terms and the trends of arms transfers, which however, are also influenced by the structural and technological constraints governing arms transfers. Such constraints cannot be ignored, especially in the manner in which they can restrict the process of

enhancing arms production regardless of the politico-strategic or diplomatic considerations. Besides, emerging (and some secondary leading) arms suppliers are, to varying extents, recipients of armaments and arms technology as well, and hence it is necessary to also consider their disposition as arms recipients.

8.7 EMERGING SUPPLIERS AS RECIPIENTS

Since emerging suppliers are still heavily dependent on the leading suppliers for most of their technological requirements, and largely for the sophisticated weaponry that they co-produce with the leading suppliers, they are also a constituent part of the recipients within the global arms production and transfer system. The recipient's demand for armaments is driven by several major factors, primary amongst which is the availability of other suppliers that are in a position of gratifying the recipient's requirements along with the role that other suppliers play in assisting the recipient's adversaries with the weapon systems they need. In deciding as to what armaments a recipient desires, the supplier has to also consider the policies and objectives of the principal suppliers of its recipient's adversaries and also the possibility of the recipient to seek alternative suppliers in case its vital needs are not satisfied. The selection of an alternative supplier is determined by several attributes, which include economic, ideological, technological and systemic considerations, as well as the recipient's growing preference for capabilities that are applicable to its current circumstances.

The economic attribute relates to a state's resource endowments, whether it is economically viable to afford the procurement of weapon systems from other alternative suppliers, or that it is dependent on one principal supplier for all its defence requirements. Effectively, those states that have enough resources to purchase any equipment available in the arms market have a greater scope to seek alternative supply sources. Nonetheless, financial independence needs to be supplemented by favourable politico-diplomatic relations between the recipient state and other supplier states, otherwise the recipient state will not have alternative suppliers in the international system. Take for instance South Africa's previous status as a pariah state globally that insinuated that it had no other enthusiastic suppliers except for the then insignificant Israel, as compared to the mainly leading suppliers, who could have provided the apartheid state with equipment and systems at the edge of technological sophistication.

What should be noted, however, is that the acquisition of armaments within a specific region may be a qualitatively and quantitatively significant exercise in another region, thus compelling a contextual analysis of the conflicts and the arms dynamics in specific regions. In the Third World, states demanded arms as a result of the disintegration of colonial empires after the Second World War and the emergence of new states, which began to establish national military institutions for defence and security. The presence of armed forces became an essential attribute of sovereignty and independence, as well as a token of power and eminence. Most of the newly established states became involved in internal and regional religious, ethnic, ideological and border conflicts, and consequently required armaments for the sustenance of their sovereignty. The Third World, therefore, became characterised by instability in the relations both within and between states, which expanded to become civil wars or regional wars within which an enormous demand for arms was prevalent.

The diffusion of military technology into these areas of strife led to the emergence of significant regional actors whose power and eminence was partly located in their military faculties, and their economic sectors remained secondary attributes of power. These actors reflected a considerable propensity to enhance their military establishments and even to develop their indigenous defence industries. The leading possessors of sophisticated systems were mainly those states that had the capability to produce armaments, particularly those that evolved to comprise the ranks of the emerging suppliers. The impetuses behind these acquisitions were the regional rivalries emanating from the general arms dynamic leading to unwarranted security dilemmas that were procreated by ambitions for regional hegemony or quests for international recognition and prestige. Furthermore, the role played by political contentions and policy-making can not be overlooked in the manner in which they influenced the intentions and the actual acquisitions of sophisticated systems.

The intention to possess more sophisticated systems was often driven by the ambition to gain a decisive advantage, which was usually offset by the rival states' acquisition of equivalent or superior systems, thus resulting in the acquisition of more advantageous systems such as weapons of mass destruction as well as cruise and ballistic missile systems for their delivery. Such weapon systems were perceived to enhance the state's prestige and recognition internationally, giving it a strategic deterrent capability that was more effective than a mere tactical or operational edge. Both developed and developing arms producing states based their perceptions on the belief that the possession of large and balanced military forces provided a state with a natural place in the

international system of power. As a result, pressure was exerted on these states' defence decision-making processes, as they regarded themselves both as significant regional and global powers, to maintain and augment their positions in the international hierarchy of states system.

For an arms producing state to obtain advanced weapon systems, it has to acknowledge the necessity to widen its scope of the sources of supply and to be able to integrate the various sub-systems and components from these varying sources into developing technologically sophisticated systems. Unfortunately, this process has to be effected within the confines of budgetary constraints as growth in defence outlays has in real terms been reduced since the mid-1980s. Therefore, governments are compelled by the political pressures to reduce their spending on defence by seeking other avenues such as collaborative programmes with other states in order to sustain their defence capabilities, which nonetheless implies that greater interdependence is anticipated in the future amongst the defence faculties of the various states. *Prima facie*, the diversification of the sources of supply may appear to be a military extravagant and irresponsible exercise, since the integration of miscellaneous components or sub-systems is a difficult process, particularly with regard to their interoperability. This condition might be more pronounced for less advanced armed forces if they have to blend their mediocre capabilities with more modern and sophisticated systems. Therefore, the politico-strategic, military-strategic, politico-diplomatic and economic or commercial considerations seem to be combined, and not unique, in the determination of the policy to diversify the sources of supply.

Seeking alternative suppliers also requires personnel that can be able to adapt to new technological systems through retraining and re-orientation without the sensitivity to foreign penetration and tutelage, which also implies the acceptance of foreign personnel into the recipient state's defence establishment. Furthermore, certain weapon systems can not be substituted by others, such that they have to be retrofitted or upgraded to meet the requirements of the recipient. Most significantly is the capacity of the recipient state to absorb sophisticated systems, which it is able to employ in combat rather than systems that are only required for prestige or deterrent purposes without being utilisable in actual combat. It is often the case that certain sophisticated systems that are procured by most recipients do not perform accordingly in combat as they do during peacetime exercises. Moreover, these systems require more advanced maintenance in terms of technical expertise, spare parts and components such that most recipients prefer to rely on "older, simpler and more durable weapons" (Snider, 1989:256). From another dimension, such systems provide an advantage for

certain emerging suppliers, such as Brazil, who offer them in their refurbished, upgraded or modified versions into the arms market.

Purchasing much more simpler and reliable defence systems guarantees the recipients less dependence on the leading suppliers, as these systems are capable of effectively competing with more sophisticated leading supplier-developed systems in combat, at a lesser cost, and subsequently become platforms that can be easily upgraded to more advanced levels. Pressures for political compliance from the leading suppliers are therefore reduced, particularly during wartime, whereby the recipients are compelled to seek sources of re-supply for depleted weapon systems and equipment. Hence, virtually all leading suppliers, with the exception of the United States, are reluctant to demand political compliance as a condition for transferring arms to recipients since these might result in the straining of relations between both states. Moreover, a convergence of interests is conceivable amongst the secondary leading suppliers and the emerging suppliers as recipients in order to reduce the latter's dependence on the primary leading suppliers and to diminish their hegemony and influence as major powers *vis-à-vis* the secondary leading suppliers. The adoption of a diversification of suppliers policy is, to a certain extent, a symbolism of the independence of a recipient from a specific principal supplier, especially considering the reaction of the respective supplier if it decides to halt the further maintenance of previously transferred equipment.

The subordinate role of the recipient states within the arms production and transfer system does not imply that they are actually impotent, as they have managed over the years to develop strategies to deal with suppliers in a manner that would advantage their own interests. One such method is the pursuit of counter-trade or offset arrangements for the weapon systems or defence equipment that they procure from (mainly) the leading suppliers. Recipients obtain various advantages from offset arrangements, the first of which is to finance trade that is often demanded by economically disadvantaged states as a result of the inability to fund the high and rising costs of foreign sophisticated weapon systems. The second advantage is the intention to stimulate exports (and to limit the constraints of imports that are largely created by policies of protectionism) through gaining access to new markets by exploiting the availed distribution networks. The third advantage is that offsets can be utilised to generate economic growth through the erection of the essential infrastructure required for industrial development. Moreover, other benefits such as the technical skills for competitive manufacturing and marketing are obtained from such offset arrangements.

Finally, offsets are demanded as a means towards establishing and acquiring defence industries and advanced production technology.

Although some of the recipient states have managed to reduce their dependence on the leading suppliers, which might have implications of influence and leverage, they are nonetheless still at the bottom rungs of the arms production and transfer hierarchical system. This is the pertinent persistent disadvantage for them as it is the ambition of virtually every state to be at the topmost levels of the management of regional and international issues, particularly those relating to their own security. Therefore, without the faculty to develop and produce advanced armaments, on the one hand, places the recipient states in a structurally inferior position. On the other hand, this inferiority becomes the rationale behind their inability to develop and produce advanced armaments, especially if the historical, socio-economic, political and cultural contexts are taken into consideration. As a consequence, these states remain victims of the manipulations and orchestrations of the globally and regionally powerful states, which is nonetheless a reflection of the more profound uneven relations of international political economy.

8.8 THE CURRENT ARMS PRODUCTION AND TRANSFER SYSTEM

The changes that are visible in the current international arms production and transfer system are a reflection of the process of the spread of technological capabilities that has occurred since the Second World War. The spread of military technology also implied the diffusion of power to the developing world and simultaneously insinuated the reduction of the power of the leading suppliers to influence recipients' compliance with their policy preferences. This was reflected mainly in the transformation of the system from a sellers' market in the 1970s into a buyers' market in the 1980s. The sellers' market, on the one hand, was characterised by a few suppliers and the purchase of sophisticated state-of-the-art systems by mainly the rich oil-producing states of the Middle East. On the other hand, the buyers' market was distinguished by a wider range of suppliers and weapon systems, with the economic imperatives becoming preponderant in the determination of national security policies for both suppliers and recipients alike. Moreover, recipients started requiring offset arrangements, which included licensed and co-production arrangements as part of the arms transfer processes.

The arms trade, therefore, evolved to be characterised by the transfer of military technology instead of the transfer of complete weapon systems, as was the case within a sellers' market. The transfer of military technology also included the shipment of upgrade kits, logistical equipment, and other components and sub-systems that did not feature prominently in the arms transactions of the previous periods. However, the contemporary arms production and transfer system is also characterised by a sluggish pace of technological innovation because of the exorbitant costs involved as well as the probability that the current engineering designs are surpassing the human capacity to operate them. Likewise, the nature of military technology is becoming less connected to the requirements of military strategy and doctrine, insinuating that the current innovations are no longer capable of moving beyond what is already available within a particular genre of military technologies.

This is particularly the case with regard to technologies associated with the revolution in mobility. Although in other sectors of the revolution in military technology, such as protection, firepower, communication and intelligence, the dynamic of innovation is advancing in a rapid pace, especially with the new developments in electronic and computer systems. This is manifested in the narrowing of the gap between the sophistication of technology that is within the inventory of the various tiers of suppliers and those of the recipients, which is perhaps rather wider with regard to the sophistication of technological capabilities for arms development and production. If the latter is the case, then the stratification within the arms production and transfer system is sustainable and reinforced, thus making it hard for the lower tiers to advance upward the ladder of arms production, as it would be determined by the imperatives of the domestic economy and the international market.

Over and above, the hierarchical structure of the arms production and transfer system as well as membership in one of its rungs is not determined by the possession of sophisticated systems within each state's arms inventory, but by the arms production base, the propensity to conduct research and development, the advancement of the technology to produce armaments and the reliance on exports *vis-à-vis* domestic procurement (Krause, 1992:212). For the primary leading suppliers, their membership is determined by the propensity to innovate at the edge of technological advancement as well as the capability to produce sophisticated weapon systems across-the-board. Moreover, they are not supposed to rely solely on exports in order to sustain their production faculty, as they possess larger domestic markets and the endowments to conduct research and development independently. Nonetheless, it is also obvious that the primary leading suppliers are also beginning

to feel the pressure of the costs of producing sophisticated weapon systems despite their expansive domestic markets.

The next level in the arms production and transfer hierarchy are the secondary leading suppliers, who advanced their competence to produce sophisticated weapon systems at or near the technological edge for domestic consumption as well as for the export market, as they became heavily dependent on the latter to keep their industries operational. This is more the case since their research, development and production faculties are limited by their constricted domestic requirements and have to rely on exports, subsidies or collaboration for their industries to float. Actually, the rise of economically motivated suppliers went beyond the confines of the Cold War bi-polarity as all suppliers became bogged down by the skyrocketing costs of producing technologically advanced systems that began to dominate the arms trade by placing a strain on both their economies and defence establishments. The secondary leading suppliers began to place a greater emphasis on the exportation of their wares in order to salvage the costs of production and also to reduce their expenditures on defence and social spending arising as a consequence of trying to efficiently manage their defence industries.

Beyond the focus on exports, was the adoption of co-development and co-production arrangements as a means of cutting the aggregate costs of the research and development programmes for new weapon systems, based on the assurance that a definite market existed within the armed forces of the collaborating partners. The latter approach was also adopted as an avenue towards compensating for the limited domestic markets that led to shorter production runs for most of the supplier states besides the primary leading suppliers, such as the United States and the erstwhile Soviet Union. The co-development and co-production arrangements appeared to benefit the emerging suppliers the most, as they did not have to absorb the costs of research and development that the leading suppliers had already incurred. Moreover, these arrangements ensured that the emerging suppliers acquired the advanced technical know-how to develop new sophisticated systems despite the limitations of foreign exchange reserves as well as the unfavourable competition that was prevalent in the arms market.

Accordingly, the secondary leading suppliers such as the United Kingdom, France, and Germany, are bent on acquiring a greater share of the arms market, which reflects their employment of aggressive marketing strategies that complement the diversification approaches adopted by the

recipients in order to reduce their dependence on the primary leading suppliers. Despite the utility of these diversification approaches, they also entail costs for the recipients, as they have to absorb new systems into their customary inventories, and a wide range of supply sources whose technical expertise for application, maintenance and repair is sometimes varied and incompatible. These changes are also compounded by what appears to be a decrease in the demand for arms in the Third World, particularly for major weapon platforms that dominated the arms trade in the 1960s to the mid-1980s. Nevertheless, novel approaches that evolve as responses to these changed circumstances will inevitably influence the structure and composition of the international arms production and transfer system.

At the lowest level of the arms production and transfer system, the emerging suppliers, most of which are incapable of technological innovation and mainly reproduce existing weapon systems since their industries are islands in less-industrialised economies, they require enormous political and economic investments to upgrade their proficiencies. Therefore, these suppliers' share of and contribution into the arms market is constricted, and as such they specialise on specific (often uncomplicated) weapon systems that constitute niches in the global arms market. As the rank of emerging suppliers began to seize a sizeable share of the market by the mid-1980s, it thus provided alternative sources for certain types of weapon systems and their support. Consequently, the possibilities of limiting arms transfers to specific regions and recipients became difficult for the primary leading suppliers, as most of the emerging suppliers had developed their own arms production and supply capabilities in response to the embargoes and other restrictions imposed against themselves and other recipients. The most significant of these restrictions were considered within the conflict context that the recipient states found themselves. Therefore, the decision to acquire a weapons production faculty became a *sine qua non* for a state to guarantee its freedom of action in defending its national interests.

The acquisition of military production technology by the emerging suppliers became realisable as a consequence of the competition among the leading suppliers for spheres of influence and for an export market which inevitably resulted in the transfer of production licences and other offsets. Accordingly, the future arms market may perhaps be more compelling for production licences to be transferred, as other offset options are not always viable alternatives for the recipients with financial difficulties and constricted markets for foreign goods. Although there were some remarkable successes that certain emerging suppliers achieved in the international arms market, which also

increased their share of this market, these successes implied therefore that the leading suppliers were no longer an oligopoly in this market. Accordingly, as from the mid-1980s onwards, there were clear indications that the emerging suppliers were becoming efficacious competitors to the leading suppliers, thus limiting the latter's access into other sectors of the market.

Therefore, the future characteristics of the arms production and transfer system will consist firstly of the excess production capacities in virtually all arms producing states, thus leading to a reduced demand and an exaggerated attempt by emerging suppliers to gain (and maintain) a foothold in the market. A fiercely competitive atmosphere will prevail as emerging suppliers will find the market completely absorbed by the capabilities of the leading suppliers, and consequently state intervention will be the only solution for sinking industries. Fierce competition will promote concentration instead of the diffusion of the market and subsequently allowing only those states that can subsidise or integrate their efforts to sustain an advanced arms production faculty. Hence, the primary motivation for the leading suppliers to restrict the diffusion of military technology to other suppliers or recipients is the fear of imparting sensitive technological know-how to potential competitors and enemies, who might utilise it to strengthen their indigenous military faculties against their own security. Subsequently, the dynamically advancing emerging suppliers are bound to experience similar pressures as the costs of defence production expand, thus compelling them to become more export-driven regardless of the politico-strategic or diplomatic imperatives.

As the emerging suppliers begin to introduce more and more of their wares into the market, the costs of research and development will begin to soar in the same manner as those of the leading suppliers, thus urging them to become more export-oriented. The only exceptions in this instance might be states such as India and those countries that have decided to integrate their arms development, production and procurement faculties, as both India and the latter are guaranteed relatively large domestic and common defence markets respectively that may allow for efficient local consumption. The tenet here is that the politico-strategic dimension of arms transfers was and continues to be the driving factor behind the states' intentions to acquire and even to produce arms. As it advances the system to its mature phases, it will be characterised by the transfer of arms production technologies and the obstruction of the pace of technological innovation. The result will be the transfer of technology through co-production, licensed production and offset arrangements, which will be the actuality of the globalisation of arms production.

This globalisation process may assume various formats, ranging from global collaboration in research and development and production, international sub-contracting, to transnational or multinational defence corporations. Participants in the system, therefore, will be compelled to relinquish their comparative technological superiority in order to keep their national or private faculties operational, thus narrowing the gap between the capabilities possessed by both the suppliers and the recipients, and making the control of the diffusion of military technology more difficult to accomplish. Therefore, those states that had attempted to develop their defence capabilities outside the auspices of an alliance framework, particularly those that had adopted an outright neutral or non-aligned posture, such as Sweden and India, may have to face difficult choices in selecting between the various weapon system programmes if they can not share the burden of developing and producing equipment with other allied states. Moreover, their stance of neutrality or non-alignment will often compel them to develop a broad indigenous arms production capability, thus having to invest heavily on developing the necessary infrastructure. In addition, they will have to make certain contractual commitments with those leading suppliers that will be prepared to transfer their weapons production technology regardless of alliance undertakings.

Nevertheless, despite their stance of neutrality or non-alignment, states such as Sweden and India still have to rely to a certain extent on foreign assistance in order to accomplish their objectives of advanced defence industrialisation. With the escalating costs of sustaining and promoting defence programmes, more importantly since they require the development of specific infrastructure and personnel, it therefore becomes difficult for those states that tend to pursue such programmes without foreign military or economic assistance. This is more pronounced in the case of Third World states, as most of them lack the economic resources necessary to develop an autonomous defence industrial base without some form of external assistance. Even for the developed states, perhaps with the exception of the United States, the pursuit of an autonomous defence industrial programme is difficult under contemporary political economic conditions.

CHAPTER 9 – SUMMARY AND CONCLUSIONS

9.1 THE INTERNATIONAL POLITICAL ECONOMY OF GLOBAL SECURITY

In the post-Cold War era there is no connection between power and purpose as was the case in the Cold War era, particularly concerning the military dimension of the state, since the broadening of the definition of the concept of security revokes the possibility of any political-military actor being identified and systematically linked with the security problem. Secondly, the nature of conflict is bound to emanate from within states themselves than from a clash of interests between two or more states. These conflicts are prevalent in the Third World where the realities of the non-existence of hegemons, alliances, or the balances of power permit the salience of security dilemmas, interstate wars and local arms races. In the developed world, the major powers are focussed on augmenting their economic preponderance and leaving the Third World to handle its own conflicts.

The causes of these conflicts are mainly responses to the prominence of globalisation, as collectives resort to more simpler identities such as ethnicity, culture or religion. With the collapse of the bipolar bloc system that was characteristic of the Cold War, the new world order failed to provide any definable order or system that collectives could identify with. Even the triumph of regionalism, that became an acknowledged phenomenon globally, did not provide a similar definition in the Third World context, as regional complexes in that part of the globe reveal antagonistic contradictions instead of the necessary peaceful co-existence and co-operation. The state, however, still remains as the most powerful actor because it is still at the pivot of political and economic organisation globally, in both the modern and the post-modern spheres of the international system. Although the role of the state is changed in the post-modern world, as a result of it surrendering other aspects of social life into the supranational framework, identity and social institutions are still largely rooted in the nation-state or the state-nation setting. Therefore, the new world order can neither be defined as unipolar, multipolar or as an a-polar order, but actually a combination of all these polarities, wherein global, regional, national and sub-national interests are intertwined towards more wealth creation within the confines of a capitalist market democracy, thus necessitating a broader definition of the concept of security in the global context.

Therefore, security has to be understood in its extended sense, as a multidimensional phenomenon that is extended from the state level to other sub-state and supranational or systemic levels, thus beginning from the individual level towards the systemic levels. The crux of the matter is that security relates to the exigency of the issue at hand, primarily the field of interest. The state becomes central when the anarchic nature of the international system is taken into consideration, whereby the mandate for the preservation of national security is accorded the state in the absence of a central authority to ensure the security of the international system in all its organisational dimensions. Therefore, the state becomes the centre of focus in politics, as the management of domestic and international constraints are conducted through domestic policy-making processes, as well as through inter-governmental consultations, so as to ensure governance through the threat or the actual application of force. For an instituted global economic system to achieve its objectives and interests, it requires a framework of security that is dependent on force or its threat so as to guarantee conformity.

However, the failure of the state to guarantee security for individuals or other sub-state collectives or groupings, other institutions such as supranational arrangements or sub-state collective structures assume the sovereignty that is accorded the state, including its monopoly of legitimate violence. In that case, therefore, security requires to be understood within its context, as sovereignty is shared both above and below the ambit of the state. This means that the agenda of security has to be widened, deepened and made more sophisticated and varied according to context, beyond the confines of military power. From a perspective of critical theory, security has to guarantee emancipation to individuals and collectives from the threats of insecurity generated by the current world order, particularly threats that deny individuals and collectives the ability to achieve their goals. The definition of security, according to critical theory, should be people-centric rather than state-centric. In contrast, the state-centric perspective argues that the issues that do not threaten the concept of the state in its physical and socio-political dimensions should not be regarded as security issues, as they do not have any political significance. These issues, according to the state-centric assertions, contain the danger of stretching the definition of the concept of security such that it becomes useless as an analytical tool.

However, the ability to survive within the world capitalist economy is determined by the propensity of the individuals, firms and states to compete efficaciously, which becomes the basis for all units' incessant insecurity within the market. The state's interventionist and protectionist strategies are

also short-lived as the domestic economy begins to seek external markets, which becomes difficult for the state when it tries to compete in the global bargaining processes. Competition, therefore, becomes expressed in two forms: the struggle for political survival is complemented by the competition for wealth in the market, thus stimulating technological innovation and subsequently constricting or demarcating the modes of economic and strategic demeanour as the basis for ensuring greater security. Therefore, those states that conform and succeed to adapt to the developing trends in the international system are guaranteed their national security, whereas those that fail, suffer the gradual erosion of their power and become vulnerable to those that continuously achieve success. Thus, economic growth becomes the principal determinant of power within the international system, and as such, the main conditionality of security.

Economic structures of the market are established and transformed through politics, and the competing socio-political interests, which are the focus of political conflict, procreate specific economic structures and institutions that govern the processes of conflict and co-operation in the international system. The market is thus a political mechanism or institution through which interaction between units (states, firms and individuals) determines their success or failure, and through which new political and economic structures and patterns are established and older ones are rejected. The international economic system provides a balanced structure of trade, production, finance, communications and transportation, in contrast to the fragmented nature of the international political system. This compels states to contend with other states and actors concerning issues that used to belong to the domestic domain. For states to enhance their efficiency and welfare necessarily have to participate within the global economic structures, which subsequently develops dependency patterns that become the main consequence of increasing density and interdependence in the current international system.

Global economic interdependence generates a permissive environment for the continued international political fragmentation, thus surpassing the state system such that international capital becomes unconstrained by state interests, and the international economy becomes part of the complex intercourse between states. Powers continuously threaten each other as they rise and fall, with the military and economic measures that they adopt to preserve their security being perceived by others to be threatening. Competition for wealth in the market is coupled to the contest for power in the qualities of survival, thus stimulating technological advancement that results in the redefinition of the standards of success. States, in most instances, have the necessary resources to

sustain themselves, and those that rely on trade as an essential part of their economic security regard interference with their supply lines as a threat to their power, welfare and stability and, accordingly, as vital national interests to be protected.

One of the major factors that determine the power of a state within the international system and consequently a decisive element of national security affairs, is relative economic growth. This is the major problem of international economic security, which is the truncation of the global functioning of the market and the fragmented character of political authority within the ambit of the international structure of anarchy. Political authority is unable to manage the scale of outreach of the international economy, which only a non-existent world government could accomplish, thus rendering the current international political economy unworkable. The state, therefore, under a global capitalist economy plays the role of mediating between the political and economic domains, thus creating a conducive or a discouraging environment for the sustenance of the current political economy under the conditions of international anarchy.

The link between the state, economic structure and political contests is located in the struggle between the various actors to promote their interests within the domestic and international political institutions. These interests are therefore projected into global institutions through the state within processes of inter-governmental bargaining, as well as within the functions of international regimes, especially when these interests enjoy political power within the state and also concerning their institutionalised political resources having an impact in the determination of state policy. However, the economic choices that these interests might have on the international system are limited by other competing forces that prevail in the international market. Hence the political and economic choices of the major interests within the dominant states are incessantly projected into the international system, resulting in their preferences dictating the manner in which global institutions and structures, including the market, are restructured. This restructuring is reflected back into the domestic domain by intensifying pressures on national actors to seek favourable policies that enable an effective and efficient management of the changed conditions. Thus the emphasis on the role political conflict plays in determining transformation in the international system rather than the structure itself, as most theories contend.

The new world order can be said to be new if there is a change in its political and economic structure, particularly if the analyses of the international system are no longer confined to the state

as the only important decision-maker. With the emergence of new powers as superpowers complementing or negating the hegemony of the United States and the heir to the erstwhile Soviet Union, Russia, or all these powers forming regional blocs with other states that become the sovereign decision-makers beyond the state, the world order can be actually termed to be new. The centre in the new order is dominated by a coalition of the major capitalist powers in a loose multi-polar type of arrangement constituting a security community that poses no threat to its constituent elements. The semi-periphery and the periphery are not regarded as serious military threats as other states are scrambling to join the security community.

Whether the security community will be able to consolidate itself as an overarching arrangement depends on the competitive nature of the capitalist market economy, that it encourages either isolationist or integrationist tendencies. The trends, however, appear to favour the latter option with arrangements such as the Group of Eight that entail collective economic management, thus entertaining the idea that the global economy is for the security and prosperity of all member states, and therefore, its security is dependent on all of them. However, the cultural and class divergences are in fact augmented by the internationalisation of capital, as some communities have prospered and others have not been able to cope with the increasing competition that is a consequence of increased interdependence and openness. Those communities and classes that have not prospered in the process become vulnerable to reactionary tendencies that place pressures on the weakened state system, which might even fail to manage the acute contradictions that might emerge as a result of global cultural and class differences.

Since economic security within a world capitalist economy is a zero-sum game, whereby the cupidity and security of some is always gratified to the detriment of others, a multinational security arrangement of the core capitalist states might not consider to intervene in the problems of the periphery. The causes might be inward-looking political and economic policies, a perceived lack of a serious threat, or an attitude of apathy arising from previous failures to provide amicable solutions. Intervention might be considered as an option in order to impose values that might be deemed to be universal or to protect essential resources that are available in certain sectors of the periphery. On the other hand, the imbalances that are encountered in the centre are transmitted to the periphery, with the boomerang effects being refined such that they do not have a negative impact on the former, and the justification being that no other options are possible as economic and political reforms based on the market are invincible. Therefore, the current problematic of the international

system is world time, which legitimises the ideology of the market and its corollary, democracy, as well as affirming market democracy's organic connection with development, growth or progress, as necessary conditions that have the power to convert society to its universal and secular benefits.

9.2 THE THIRD WORLD SECURITY PROBLEMATIC

The Third World security problematic consists of the domestic, regional and global dimensions, with the domestic being the primary dimension, as internal vulnerabilities are specifically responsible for incessant conflict within and among the peripheral states. Neighbours are compelled to intervene within internal contentions as states lack internal cohesion and legitimacy, and this provides the bases for domestic insecurity in the Third World. The major reasons for instability are the infancy of the state-building processes and the time constraints requiring these states to accomplish these processes, moreover as remnants of the discontinuities of colonialism that imposed on them capricious boundaries and forced them together as disparate ethnic entities, thus confounding their ability to build legitimate and integrated states. Hence, most of them cannot be regarded as nation-states, but as state-nations. The state, therefore, is at the centre of the security problematic in the Third World, as its weakness is the main source of insecurity and the perceptions of its political élite that essentially define and interpret the nature and character of the security problem.

The security problematic, as well as their lack of both political and economic power to influence direction fundamentally determines the Third World states' behaviour in the domestic domain and within the international system. Consequently, the meagre resources available to them are usually depleted by security concerns, subsequently dislocating programmes of economic growth and development. The military sector, therefore, becomes the beneficiary of the proficient utilisation and employment of capital-intensive projects and technology, as it plays a central coercive role in the processes of state-building and promoting security typical of the nineteenth and early twentieth century Europe.

In most instances, the military sector seizes political power and pursues the state-building process on its own if it perceives that the civilian élite is failing to direct the process' successful management. This is further reinforced by the weakness or the dearth of political institutions and structures of civil society that ensure the maintenance of the democratic norms of governance, as

well as the pressures of time and international competition on the state-building process, thus segmenting and protracting the process to focus on one phase at a time. Democratic forms of government, therefore, do not insinuate an accomplishment of the state-building process for the Third World states, nor do they imply that their vulnerabilities have been overcome to be considered as internally stable. Whether they are democratic or not, Third World states' demeanour is dependent on their instability and conflict-prone nature that is reminiscent of virtually all the early state-makers, and as a result, no strong connection can be discerned between democracy and development.

Most of the Third World states are weak states, as their governments are consistently threatened by domestic discord generated by the lack of political and societal cohesion, particularly in the day-to-day management of political and economic interaction. Moreover, as weak states, the institutions and the idea of the state are often violently contested such that they fail to play an authoritative role that ensures unity amongst their subjects, thus are merely *de jure* states by virtue of being recognised by other states. Their referent objects of security are the prevailing regime's contending groups and individuals, as national objects barely exist, thus outside threats and interference, which are assessed as national security threats, are grouped together with the domestically contending factions. Therefore, the existence of weak states within the anarchic structure of the international system presupposes its instability and its conflict-prone nature.

From these bases, therefore, the prognosis points to greater possibilities that the trend of continuing intra-state and subsequent regional conflicts will increase the demand for conventional weapons, particularly in East and Central Europe, the former Soviet states, and in most parts of the developing Third World. The regeneration of nationalism, ethnic, racial and religious friction and the exposure of weak states that emerged with the negation of the Cold War, mainly motivate these conflicts. Emerging arms suppliers are the ones that might benefit from this demand as they produce weapons that are actually apt for the current conflict conditions. Therefore, the move towards the regionalisation of the arms trade as a consequence of the internationalisation or the globalisation of the defence industries is a great possibility, and the increasing commercialisation of arms transfers could precipitate the inclination towards regionalised arms production.

9.3 THE ARMS PRODUCTION AND TRANSFER SYSTEM AND THE DYNAMIC SIGNIFICANCE OF TECHNOLOGY

The primary motives behind the evolution of the arms production and transfer system are the pursuit of victory in war, the pursuit of power and the pursuit of wealth. The state and governments are responsible for the contemporary arms trade rather than the private manufacturers, as the state and governments have a vested interest in the sanctioning of arms exports; as governments are responsible for the creation of a conducive environment for the sustenance of incessant arms production; and as governments fully believe in the possession and export of armaments as being inextricably linked to their concerns about national sovereignty and policy-making. In virtually all arms manufacturing states, the government is both the sanctioner, the licensing authority and salesman of arms. Currently, weapon systems are no longer produced solely for national consumption or employment, but are also tailor-made to meet the needs of specific clients on a case-by-case basis. Governments use various marketing techniques to entice prospective clients to purchase their armaments, and they often provide financial assistance in terms of credit to the arms manufacturing entrepreneurs in order to bolster their competitive edge over other contesting suppliers.

Although scientific and technological innovation usually outpaces the political and military interests that try to control its progress, appropriate politico-bureaucratic control fails to contain the evolution and diffusion of scientific and technological innovation. Nevertheless, political and military officials ensure that the process of production, deployment and transfer of weapons is rigorously controlled, as weapons can be potential threats to each state's stability if they can fall into wrong hands. Arms exports are mainly promoted by the rapid growth in the complexity and scale of technology, manufacturing and the related costs of production, particularly the increasing demand arms production has on capital. A high rate of fundamental knowledge, the ability to exploit sophisticated technologies, vast scales of resources, and the knowledge of future defence needs for which weapon systems are being developed, are required. Qualitative changes in arms transferred have been more or less congruent to their quantitative diffusion since states had previously transferred arms that were superfluous and technically antiquated in order to accommodate top-of-the-range systems. However, currently, recipients demand the most sophisticated and advanced weapon systems, and their requirements, in most instances, receive top priority than domestic needs

on the grounds that foreign demands initiate the introduction of new systems that ultimately furnish the supplier state's own armed forces.

A state's capability to produce arms is not always commensurate to its position in the supplier market, as virtually all arms producing states are compelled to penetrate the market in order to regain the costs of research and development and production investments that can only be salvaged by achieving economies of scale through exports, or through huge domestic or co-production markets. At certain intervals some states fall out as producers and suppliers of weapons, while others penetrate the system reacting to a variety of political, economic or technological stimuli. Most of the new entrants start from copying or from license-producing existing systems, at times importing components and parts to be assembled domestically, since the capacity for independent research, development and production of comprehensive systems is not a prerequisite for attaining the status of being a producer and supplier of armaments. The emergence of regional powers, therefore, can be attributed to the contribution made by the diffusion of military technology of which arms transfers are a significant component, as states currently seek the technology to license-manufacture or to co-produce weapon systems within their own territories.

The emergence of a buyers' market, was accompanied by the emergence of transnational mergers, take-overs, and strategic corporate alliances amongst firms, with the intention of co-producing or co-marketing arms through amalgamating their resources so as to strengthen their sales. This transnational interaction is also characterised by military corporate partnerships through foreign investment, international sub-contracting, international licensing, and joint ventures, which are all labelled as the internationalisation or globalisation of the arms industry. However, the arms industry still retains a strong inclination to nationalism, as governments have scrupulous intentions of maintaining strong domestic arms industries to provide for their armed forces as well as to ensure an austere regulation of the arms trade. Co-development and co-production are therefore means through which supplier states augment their position in the international hierarchy of powers, which is achieved by enhancing their industrial and military capacities, as the arms industry is in most instances a measure of the state's position in the international hierarchy of powers.

The possession of the capability to develop and produce modern armaments, therefore, becomes a central element in the determination of the hierarchy of power globally, as technological innovation, in its military dimension, determines the evolution of the modern state by providing advantages in

warfare to those states that had the wealth and social organisation to afford and to utilise modern weapon systems. For modernisation to take root, it has to be mediated through the state system of which the military dimension of technology provides the central impetus. Moreover, technological innovations transform the arms transfer system, either in an incremental or revolutionary manner. Changes that occur as a result of technological innovation are a manifestation of abstruse changes in human knowledge and social organisation, and as such, are not uniquely or primarily driven by military interests, but improvements of military instruments are a result of those changes. Regardless of the peculiarity that characterised the revolution in military technology, it should not be considered as existing outside of the broader revolution in science, technology and human finesse.

The prevalence of the revolution in military technology augmented the significance of technology in the dispersion of power, and as a result, expanded the range of inequalities in terms of capabilities among the various states. For arms producers, there is always pressure to acquire and preserve high standards of technological innovation, which is bound to outdo them if they are not competent. Recipients, on the other hand, are obliged either to match or attain an edge over their opponents by purchasing modern weapons from the suppliers. As part of a desire to strengthen industrial development, these states pushed to acquire their own industrial capabilities of which some had military industrial production as a priority, of which a few of these even managed to become distinguished competitors in some sectors of the arms transfer system. The subsequent multiplication of sources for armaments led to the capability to manufacture locally being directly transferred from suppliers to recipients. However, as late entrants into the arms business implies that they have a difficulty catching up with the leading suppliers, and consequently have to rely constantly on their leading counterparts for the advanced technological capabilities they do not possess.

The hitherto process of the global strategic environment has always been characterised by technological innovation, which was catalysed by the industrial revolution thus generating unevenness in the quality and quantity of technology possessed by the various states, as well as the diffusion of technology that interacts actively and potently with technological innovation. The diffusion of military technology resulted in the creation of a hierarchy of states that is determined by their capabilities in terms of arms production, with the top echelon occupied by those states that can innovate and produce the whole range of weapon systems, and at the bottom being the limited

capability producers and non-producers. The top echelon states have a complete arms manufacturing capability, complemented by an adequate research and development capacity that ensures top-of-the-range technology.

Bottom of the range states are either temporarily or totally dependent on the arms trade for their modern weapons' requirements for the maintenance or the signification of their independence. Within the middle range are partly producing states, which have a significant capacity to provide armaments of considerable sophistication but nonetheless do not match the capability or the quality of armaments produced by the top echelon states. Benefiting from arms transfers are the bottom of the range or third-tier emerging suppliers, who are heavily dependent on exports, and find their market niche on specialised requirements for low-cost, easy-to-operate and unsophisticated armaments. As they have much lower research and development investments, their production and export share is extremely constrained. Their arms industries are perhaps sustained by a strong political will domestically, which overlooks economic considerations and is committed to procure indigenously produced weapons. The sustainability of their arms industries is, however, not guaranteed.

Another aspect that is closely linked to the question of arms transfers and the diffusion of military technology is the concept of the arms dynamic whose extreme dimensions consist of the concepts of arms racing and the maintenance of the military status quo. The concept of arms racing usually suggests a self-stimulating military rivalry between states in which their efforts to increase their military security augment the threats they pose to each other. The concept of the maintenance of the military status quo refers to all the pressures that compel states to acquire and upgrade their armed forces, which is a global process denoting specific circumstances of a state or sets of states. Therefore, in order to circumscribe between arms racing and the maintenance of the military status quo, is to first identify between what is abnormal and normal behaviour respectively. The alleviation of some of the conflicts that were motivated by Cold War antagonisms, the gratification of most states' weapons requirements, and the omnipresent world economic recession, however reduced the demand for arms. Nevertheless, the arms trade's supply side is still dominated by the primary leading producers and suppliers of the Cold War past, the United States and the successor to the erstwhile Soviet Union, Russia, while the other European states are producers on a reduced scale, as secondary leading suppliers.

9.4 THE RATIONALE FOR TRANSFERRING ARMS

The relations between and within the levels of actors are horizontal and vertical in nature, and can be grouped into three substantive sub-categories: politico-strategic; diplomatic and ideological; and economic-scientific/technological. Therefore, arms production and transfers are driven by three conventional motivations: the pursuit of victory in war; the pursuit of power; and the pursuit of wealth. The pursuit of victory in war and the pursuit of power are for analytical purposes considered to be the military-strategic and politico-strategic objectives respectively that states try to achieve in their relations within and between themselves, whereas the pursuit of wealth is defined to imply the gratification of purely economic objectives. National security interests are basically responsible for state suppliers and recipients to be involved in arms transfers relationships, and as such are essentially political in character. The ideal goal of arms transfers is to satisfy the military ambitions of the parties with regard to the international hierarchy of power, to augment their diplomatic position, and subsequently strengthen their respective regimes.

States usually acquire arms for security reasons, particularly towards their neighbours, and to enhance their reputation in the regional and global balance of power. Nonetheless, virtually all states in the interests of national security prefer to be independent from suppliers abroad in their arms acquisition programmes. However, very few states possess the capabilities to do so. Before military assistance, aid and grants or arms sales were used to further military ambitions abroad, states used to rely on alliances, which proved to be capricious and fragile. Allies, therefore, could be militarily strengthened through the grant or sale of arms, which moreover could be accompanied by the possibility of obtaining or installing facilities within their territories. Therefore, arms transfers had an important politico-strategic role to play for ambitious and hegemonic states, nonetheless with various military costs and disadvantages involved, such as the problem of re-transfers, the depletion of the supplier's own inventory, the political repercussions of supporting latent rogue states and the probabilities of being drawn into an adventitious arms race or conflict.

The political connotations that are unique to arms transfers are rooted in their being commensurate with the objective of national or global security, their transfer assuming a more politico-strategic and diplomatic role than a mere military utility in their impact on the international balance of power. In the post-Cold War period, as in the Cold War era, arms transfers still play an integral part in the foreign relations of each and every supplier and recipient state. The state's power, proficiencies and

centre of gravity in the international hierarchy of sovereignties are dependent on its arms-supply endowments. Both the suppliers and the recipients stand to benefit from an arms transfer relationship in the form of leverage and influence and the augmentation of their capabilities respectively. The global anarchic system, with its innate antagonistic relations, compels states to pursue large-scale arms production so as to meet their foreign policy requirements. These requirements are pursued through the power of the state, which is reliant on military organisation, whose adequacy is partly dependent on the level of sophistication of its military technology *vis-à-vis* other states, thus serving to explain the role of large-scale arms production in the pursuit of power by states.

The possession of advanced military technology by a state is a pivotal indicator of the basic capabilities of that respective state, and shifts in the distribution of such capabilities reflect changes in the international system. Within the pursuit of power and influence by states in international relations, they are also inclined to establish an arms industry, as a demonstration of status, capability and an independent capacity to wage war. Therefore, only a few suppliers have the potential to use their arms transfers as a primary part of their foreign policy, especially within the conditions of a buyers' market, where suppliers are compelled to commercially-orientate their arms transfer policies. Primary leading arms producers have the means to exert influence, of which the middle or minor arms producers are apparently denied. However, recipient states are presumed to dictate the terms of trade in the market due to the vulnerability of arms industries to vacillations in foreign orders, and even to develop their own industries thus transcending into an area previously dominated by industrialised states.

An arms industry is not solely established for political reasons, as there are economic motivations as well, such as the intention to save the costs of importing armaments from other suppliers, and by exporting arms the balance of payments are enhanced. Moreover, an arms industry can generate and maintain employment and the necessary capabilities in the field of advanced technology. Consequently, these motivations subsequently become strong impetuses for arms exports for those states that have attained an arms production capability, as the non-existence of a large domestic market tends to affect the ability to achieve economies of scale through domestic production, whereas exports help to lengthen production runs so as to amortise the costs of research and development. This becomes the reason for states to struggle voraciously for arms markets and others to resort to multinational production projects. Therefore, the intention to achieve economies

of scale is motivated by the process of qualitative advance, which requires that sophisticated weapon systems be incessantly developed.

Like any other industrial production process, arms production depends on various inputs and factor endowments available in any economy: the standard of industrialisation; an appropriate infrastructure; advanced human resources; backward and forward links with other sectors of the economy to provide raw materials and sub-contracting; a certain degree of state support and control; and the establishment of a market for the finished products. These factors, combined with the political will, the pursuit of power and victory in war, which initiated the establishment of an arms industry in the first place, are critical success factors of the whole endeavour. The major problem usually is that if arms are considered as any other commodity that has market value, arms transfers are usually perceived to be the obscure answer to the resolution of contradictions between politico-strategic plus diplomatic requirements and the domestic socio-economic essentials. As more and more states develop the capacity to manufacture weapons, the arms market is saturated by increasing numbers of suppliers, thus intensifying the extent of competition. Most arms producing states, therefore, are pressurised to export arms in order to compensate for the costs of production and also to be exposed to the ferocious competition in the market so as to be introduced to the necessarily tenacious technological developments such that they can improve their own technical faculties.

For the leading suppliers, on the one hand, arms production and exports are viewed as the advanced thrust of the civilian expansion of the country's economy, as well as a means of keeping pace in the technological race and the search for markets. For emerging suppliers, on the other hand, arms industries are considered to be a key component of the country's economic and political modernisation. However, the benefits are not as remarkable as they are portrayed, as arms exports usually constitute a minor fraction of the total exports for most arms producing states, and that no arms producing state is less or more dependent than others on arms exports for enhancing its balance of payments. Therefore, arms transfers are a means of maintaining viable national defence industries that are connected to images of independence, sovereignty and prestige, which are, nonetheless, political enterprises. The major benefit of arms transfers is the transfer of technology which may benefit an indigenous arms industry or which may also have civilian applications. Other benefits include offset arrangements that tend to have a positive impact on the recipient state's

economy if they are sustainable, and if not, become sheer reductions of the cost of the procured equipment.

The motor of technological change is primarily the motive force driving the cycle of the arms production and transfer system. The location of the state within this cycle along with the progress of the cycle decisively determine the options states have in terms of using arms transfers as instruments of influence. The motives of the various supplier states vary according to the tier to which they belong, and this provides one of the methods to determine the location of a supplier in the hierarchy. Primary leading suppliers in the first-tier are presumed to be relatively obdurate to economic factors and are unperturbed by the pursuit of victory in war, as they are technologically preponderant and huge in size, thus are focussed on the pursuit of political power in their arms production and transfers. Secondary leading suppliers in the second-tier are compelled to follow the pursuit of wealth as they are driven to follow the technological lead of the first-tier suppliers. Third-tier emerging suppliers are assumed to follow the pursuit of victory in war, or the pursuit of security, as they are technologically inferior or vulnerable.

The interaction of these different motivations after a period of revolutionary technological innovation directs the evolution of the global arms production and transfer system and explains the rapid spread of new military technologies, as states attempt to maintain or enhance their status and independence within the hierarchy. Nevertheless, for all the arms supplying states, regardless of rank in the arms production and transfer system, arms transfers involve both political and economic considerations, and as such, they also serve politico-strategic goals by virtue of intending to maintain a sustainable arms industry. In this sense therefore economic means are used to serve political ends.

Most economic analyses argue that scarce resources are being misused with the procurement of armaments, which alternatively could be used towards economic growth and development, which is a representation of a zero-sum relationship between defence expenditure and economic development. Actually, arms interests are double pronged: firstly they are related to power or security considerations; and secondly, they are related to the creation of wealth, profits, and employment, thus ensuring the welfare of the state. These processes require huge investments, which very few states can afford, thus even more developed states elect to enter into joint-development, production and marketing.

Within the developing world, leaders do not demarcate between the objectives of national security and the ambitions of national development. These are not considered to be mutually exclusive objectives, but intertwined policy goals towards achieving commensurate political exigencies. Thus, national security is not regarded as antithetic to development, but as its prerequisite. The deduction here is that the transfer of armaments is a means of ensuring the security of each and every state that will outlive the anarchical sovereign state system. Accordingly, within the present interdependent environment, wherein military technology is an essential factor in the economies of many states, there will be a lasting demand for the utilisation of this technology for development and national security purposes. Based on these findings, several inferences are proposed in the following section, which, however still require further investigation and verification.

9.5 THE EMERGING SUPPLIERS AND THE CONTEMPORARY ARMS PRODUCTION AND TRANSFER SYSTEM

Within the emerging suppliers, primary emerging suppliers have slightly captured the process of technological innovation and a limited independent research, development and production capability for highly advanced weapon systems. But they still require foreign components for some of their advanced systems. Secondary emerging suppliers have managed to capture the technical propensity to adapt existing systems and to develop fairly sophisticated systems for their armed forces and even to satisfy the export market. Finally, the tertiary emerging suppliers are still confined within the ambit of reproducing existing systems. Although they have managed to develop several sophisticated systems, they are still heavily reliant on the inputs of the leading suppliers to move up the ladder of production.

The changes that are visible in the international arms production and transfer system are a reflection of the process of the spread of technological capabilities that also imply the diffusion of power to the developing world and simultaneously insinuate the transformation of the system from a sellers' market into a buyers' market. The buyers' market is distinguished by a wider range of suppliers and weapon systems, with the economic imperatives becoming preponderant in the determination of national security policies for both suppliers and recipients alike. Moreover, recipients require offset arrangements, which include licensed-production and co-production arrangements as part of the arms transfer processes. The inference here is that: *the arms trade, therefore, has evolved to be*

characterised by the transfer of military technology which also includes the shipment of components and sub-systems that will augment and enhance the research, development and production capabilities of the emerging suppliers.

However, the contemporary arms production and transfer system is also characterised by a sluggish pace of technological innovation because of the exorbitant costs involved as well as the nature of military technology becoming less connected to the requirements of military strategy and doctrine. The current innovations are no longer capable of moving beyond what is already available within a particular genre of military technologies, which is manifested in the narrowing of the gap between the sophistication of technology that is within the inventory of the leading suppliers and those of the recipients. However, the argument that leads to the second inference is that: *this gap is perhaps rather wider with regard to the sophistication of technological capabilities for arms production. If this is the case, then the stratification within the arms production and transfer system is sustainable and reinforced, making it hard for the lower tiers to advance upward the ladder of arms production.*

The hierarchical structure of the arms production and transfer system as well as membership in one of its categories is determined by the arms production base, the propensity to conduct research and development, the advancement of the technology to produce armaments, and the reliance on exports *vis-à-vis* domestic procurement. For the primary leading suppliers, their membership is determined by the propensity to innovate at the edge of technological advancement as well as the capability to produce sophisticated weapon systems across-the-board. They are not supposed to rely solely on exports in order to sustain their production faculty, as they possess larger domestic markets and the endowments to conduct research and development independently. However, for every arms-producing and supplier state, arms exports contribute significantly on the share of public expenditure allocated to the defence sector as domestic demand declined and the costs of weapon systems multiplied, thus compelling the defence firms to be excessively export-reliant.

The secondary leading suppliers advanced their competence to produce sophisticated weapon systems at or near the technological edge for domestic consumption as well as for the export market, as they became heavily dependent on the latter to keep their industries operational. This is often the case since their research, development and production faculties are limited by their constricted domestic requirements and have to rely on exports, subsidies or collaboration for their industries to float. The emerging suppliers, on the other hand, most of which are incapable of technological

innovation and mainly reproduce existing weapon systems since their industries are islands in less-industrialised economies, and they require enormous political and economic investments to upgrade their proficiencies. Therefore, the third inference is that: *the emerging suppliers' share of and contribution into the arms market is constricted, and will remain as such, since they specialise on specific (often uncomplicated) weapon systems that constitute niches in the global market.*

Inasmuch as the decision to acquire a weapons production faculty was a *sine qua non* for a state to guarantee its freedom of action in defending its national interests, the acquisition of military production technology by the emerging suppliers became a consequence of the competition among the leading suppliers for an export market, which inevitably resulted in the transfer of production faculties and other direct offsets. Accordingly, the future arms market may perhaps be more compelling for production faculties to be transferred, as other offset options are not always viable alternatives for the recipients with financial difficulties and constricted markets for foreign goods. The fourth inference is therefore that: *the characteristics of the unfolding arms production and transfer system are distinguished by a fiercely competitive atmosphere* as emerging suppliers uncover a market completely absorbed by the capabilities of the leading suppliers, and consequently state intervention becomes the only solution for sinking industries. Fierce competition promotes concentration instead of the diffusion of the market *and subsequently allowing only those states that can subsidise or integrate their efforts to sustain an advanced arms production faculty.*

The dynamically advancing emerging suppliers are bound to experience the pressures for attaching end-use or re-transfer restrictions on sophisticated systems that are incessantly transferred to demanding recipients despite the sensitivity of the technology incorporated, as the costs of defence production expand, thus compelling them to become more export-driven regardless of the politico-strategic or diplomatic imperatives. Therefore the fifth inference here is that: *as the emerging suppliers begin to introduce more and more of their wares into the market, the costs of research and development will begin to soar in the same manner as those of the leading suppliers, thus urging them to become more export-oriented.* The only exceptions in this instance might be integrated regional complexes or transnational arrangements that will possess relatively large regional defence markets that may allow for efficient local consumption.

The politico-strategic dimension of arms transfers was and has been the driving factor behind states' intentions to acquire and even to produce arms. As it advances the system to its mature phases, it

will be characterised by the transfer of arms production technologies and the obstruction of the pace of technological innovation. The result will be the transfer of technology through co-production, licensed production and other offset arrangements, which will be the actuality of the globalisation of arms production. This globalisation may assume various formats, ranging from global collaboration in research and development and production, international sub-contracting, to transnational or multinational defence corporations. Thus the final inference is that: *participants in the system, therefore, will be compelled to relinquish their comparative technological superiority in order to keep their natioal or private faculties operational, thus narrowing the gap between the capabilities possessed by both the leading and the emerging suppliers.* This, however, is rather a contrasting dimension to the second inference (above) that *the stratification within the arms production and transfer system will be sustainable and reinforced, thus making it arduous for the lower tiers to advance upward the ladder of the arms production and transfer system.*

For those states that had attempted to develop their defence capabilities outside the auspices of an alliance framework, particularly those that had adopted an outright neutral or non-aligned posture, they have to face difficult choices in selecting between the various weapon system programmes if they can not share the burden of developing and producing equipment with other allied states. Their stance of neutrality or non-alignment will often compel them to develop a broad indigenous arms production capability, thus having to invest heavily on developing the necessary infrastructure. In addition, they have to make certain demanding contractual commitments with those leading suppliers that will still be prepared to transfer their weapons production technology. Nonetheless, despite their stance of neutrality or non-alignment, they will continue to rely to a certain extent on foreign assistance in order to accomplish their objective of an autonomous defence production capability. With the escalating costs of sustaining and promoting defence programmes, it will however be difficult for those states that tend to pursue such programmes without foreign military or economic assistance. This will be more pronounced in the case of Third World states, as most of them lack the economic resources necessary to develop an autonomous defence industrial base without a remarkable measure of external assistance.

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